The Builder.

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The Resources of Estates—Farm Buildings.

DURING the last fifteen years farming in this country has made great progress. It has become a science. A farm is seen to be a manufactory of corn or beef, as it may be, where skill and money must be expended, in order to produce an advantageous result, as they must be in a manufactory of tables or long-cloths. The movement owes much to the publication of Liebig's works on Chemistry about 1840; and many books to help it on have been published by English investigators. Even now, however, the application of the knowledge which is certain is far from universal, and nowhere is it *fully* applied. There is not a landed estate in the kingdom, however well managed it may be, that might not be immensely improved. The land could be made to support a much larger number of persons than it does, and increase largely the general sum of happiness. This will be effected gradually, and to bring it about we must look to the dissemination of knowledge on the proper management of land. Let us, therefore, give a friendly welcome to the portly volume called "The Resources of Estates," by Mr. John Lockhart Morton, which has been recently published* and is calculated to aid very considerably the object in view. The writer speaks from practical experience; and, with decided opinions on some of the points discussed, states his views with fairness, and solicits correction if he be wrong. The headings of some of his chapters,—"How to make the most of Landed Property;" "The Soil and the Treatment it should receive;" "Land Agents;" "Farm Leases;" "Building Fixtures;" "Valuation of Landed Property;" "Farm Buildings;" "Home Farms;" "Let Farms," and "The Preservation of Timber,"—will serve to show the scope of the work at once. Unfortunately it has not been thought necessary that the landowner should undergo a special course of training to enable himself to make the most of his own, and he not unfrequently fails, partly in consequence, in obtaining a good agent and the amount of income the property ought to yield. Mr. Morton strongly objects to lawyers as agents. "As a general rule," he says, "law agents make bad land agents:"—

"Their studies have taken them altogether in a wrong direction; and, though they may strenuously endeavour, by reading books on rural subjects, and by conversation with practical farmers, to make up for the want of special training, they seldom succeed in being more than mere smatterers, who could be put to shame by a few questions from any tyro in farming. Fancy a man who does not know the difference between wheat and barley, nor between swedes and yellow turnips, laying down rules for the guidance of a tenant farmer, and even ridiculously enough determining, on his own judgment, the rent that ought to be paid for a farm. There are many agents of estates, in different parts of the United Kingdom, who are even more ignorant of farming affairs than this would seem to imply. They care little about the properties committed to their charge, except it be in connection with the rental which is yielded by them; and rather than lay out a small sum annually on the repairs of buildings, they will allow them to fall into a dilapidated state, thereby taking direct means to lower the letting value of the land."

Often the landlord cannot change his agent if he would. He is, perhaps, in debt and must depend on his law agent for a mortgage. To change his agent is to pay off his debt, a thing not always easy. Choose a right agent, therefore, in time.

To promote agricultural progress, nothing is more needed in the letting and taking of land, than the general adoption of equitable leasehold tenures; many yearly tenants think the landlord's verbal promise good enough security, but this is a very unsafe position. Properly looked at, the landlord is as much interested in letting his land on lease as the tenant is.

Such is the confidence felt in the landowners of this country that thousands of pounds are spent by tenants on land not their own without any deed whatever to prevent the owner from raising their rent to the extent of their expenditure. Under our own eyes not long ago ten or twelve thousand pounds were spent on a twenty-one years' lease, the tenant taking for granted that a renewal will be given hereafter on fair terms; and so doubtless it will be. But this is not the right ground to stand on. Mr. Morton says on the subject,—

"From the bad treatment experienced, a year or two ago, by one of the best of the Duke of Northumberland's tenants, who—after making great improvements upon his farm—was turned out of it without receiving compensation, there should be no trusting to a landlord, however good he may be. Distinct agreements cannot be objected to by those proprietors who wish to act fairly with their tenants, and with others there is an absolute necessity for them."

The chapter on the valuation of land may be usefully studied. The writer objects very strongly to those who value land by simply learning the rent of the land, or who even go so far as to inquire if it be underlet or overlet, and then take so many years' purchase of this rent as the value of the land:—

"It is misapplying a name altogether, to call the man who follows this system, a land-valuer. He simply takes the rental as his guide; he does not *value* land at all. True, he converts the rental into a fixed amount, and *says it* is the gross worth of the property; but the data on which he does this are not his own. He merely apes at the position of a valuator—he has no right to be regarded as occupying it, and does not occupy it. That proprietors frequently suffer by unskilful valuations of this sort being made, there cannot be a doubt. A property may be very cheaply let, without the fact being known to very many in the district. The soil may be naturally good, but in consequence of its not being properly farmed, those who know no better, will possibly think it not only poor, but too highly rented. In a well-cultivated district, the general opinions entertained by intelligent persons, in respect to the value of a neighbouring farm, are often very correct; but in a badly farmed locality, it is a totally different thing."

For the proper valuation of land considerable acquirements and great discrimination are necessary.

The farm dwelling-house and farm buildings are treated of at some length, and a number of plans and views are given. The first requirement of a farmer is a proper homestead: without this he will be unable to compete with those who have it; every thing will cost him more. The losses sustained in feeding cattle, from the use of cold or ill-ventilated houses, cannot be calculated; and so with regard to stables. You cannot farm profitably without good farm buildings, any more than you can grind without a mill. It is not the first time we have brought this subject before our readers. In previous volumes it has been urged and re-urged, and we have given our reasons for suggesting that in the designing of farm buildings Beauty should not be altogether lost sight of. In this point of view we are forced to withhold praise from the designs given by Mr. Morton. He advocates very strongly the use of Covered Homesteads, in opposition to those with an open court, maintaining that in reducing the space to be walked over, the saving in labour on a large farm amounts to from 80*l.* to 100*l.* a year. The great objection to them, as it seems to us, is the *difficulty of ventilation*, and of keeping all clean. We rather incline to a central open yard, the manure-court being of course roofed over.

The ignorance, or perhaps thoughtlessness, that prevails in respect of the making of manures is extraordinary. Looking over the wall of an old churchyard in Kent a few days ago, into a large open yard filled with cows, where manure was lying about in heaps,—dried by the sun and lifted by the wind, its essence flowing off into a stream at the side,—it was impossible to prevent the expression, "How wasteful!" "What do you mean by that?" said the farmer, who happened to be behind the stable-door: "there's no waste here, I can tell you." After two minutes' conversation, however, he exclaimed, "Well, I beg your pardon. There is something in what you say; but I never gave it a thought before, and I have had a muck-heap many a year." Manure is corn, grass, gold; and should be properly taken care of. Millions of pounds sterling are sent out of the country every year to buy those fertilising agents which we waste on all sides.

In designing stables, our author urges the value of a feeding passage in *front* of horses, and with much reason. He says,—

"The position of the stalls in a stable has a material effect upon its general healthiness. It is still frequently the practice of architects, to place the stalls against a dead wall, and, accordingly the animals, in breathing, are compelled to re-inhale the corrupted air which, on leaving the lungs, is obstructed in front. In the injurious effects which result from the ammonia of the manure coming into contact with the lime of the building, and affecting the eyes of horses, we see another objection to this mode of placing the stalls. A wall at a little distance from the horses' heads, especially if it happens to be an outside one, must, by its condensation of foul vapours and the hinderance to circulation, greatly add to the impurity of the whole interior. The high temperature of the expired air causes it to ascend towards the roof; but if no provision is made for supplying fresh air directly in front of the stalls, the colder and heavier air is drawn forward from behind, and with it comes ammoniacal vapour, which, besides injuring the eyes, is taken into the lungs, and, polluting the blood, seriously weakens the system of the animal."

With regard to feeding-boxes for cattle, as compared with stalls, he considers that the first are far preferable. In erecting new farmsteads, it is desirable to provide both. An impression exists that when a proprietor cultivates his own farm he will lose his money. That this is often the case is tolerably certain, but the loss is usually the result of ignorance or bad management. He is often looked upon as fair game by all parties, and must keep his eyes open to protect his pockets. Much will depend on the bailiff he may have in his employ; and we wish it were easier than we have seen it to be in our own experience to obtain the right man. Clever scamps and honest dolts seem to be more plentiful than men who unite honesty, knowledge, and common sense. Mr. Morton fully appreciates this difficulty, and points out to "loving mothers," whose sons must live by their own exertions in one way or another, that they

* "The Resources of Estates: being a Treatise on the Agricultural Improvement and General Management of Landed Property," by John Lockhart Morton, Civil and Agricultural Engineer, London; Author of Thirteen Highland and Agricultural Society Prize Essays. London: Longman, Brown, Green, Longmans, and Roberts, 1858.

ought not to object to their learning *practical* farming merely because in so doing they must soil their fingers and sleep the sleep of a labouring man for several years. *Practice* alone, however, will not do, there must be science too. To get qualified home-farm managers we must have an educated class, and their education, our author thinks, should have for its object—1*st*, Practical agriculture, including working with the hands for several years on a farm; 2*nd*, A careful study of farming practices in different districts; and 3*rd*, An acquaintance practically with the mode of executing general agricultural improvements. Then, in the scientific department, they must acquire a well-grounded general knowledge of — 1*st*, Chemistry; 2*nd*, Geology; 3*rd*, Botany; 4*th*, Physiology; and 5*th*, Natural History and Veterinary Surgery.

"But it may be said that I am laying out a course of instruction for farm managers little less than that of some of the learned professions. Yes, I am perfectly aware of the fact; for what is farming, in the highest sense, but a profession requiring more skill and general acquirement than perhaps any other business? The cultivator of the soil is the connecting link between the great inorganic world and the world of business activity. He stands in a very intimate relation to Nature, for he is the agent that draws forth her resources, and demonstrates her latent power. And can he do this in the most effective manner, without a comprehensive knowledge of all the laws which his daily operations call into action? Surely not; and yet the farming of the United Kingdom is carried on with a comparatively small share of this comprehensive knowledge, and is considered superior to that of any other country in the world. Were our home-farm managers and tenant-farmers educated as they ought to be, this country would no longer require to import her millions of quarters of wheat; for it would not only become self-supporting, but ultimately capable of exporting large quantities of grain. How desirable is it that this should be the case! and how important that all the home farms in the kingdom should be the exemplars of the general systems of management that are capable, when universally adopted, of bringing about this result!"

It is because this book of Mr. Morton's is calculated to aid very efficiently in bringing this about that we cordially recommend it to our readers.

ART ABROAD.

Rome.—The city of Rome has been enriched with two very fine tombs, that of the sculptor Carlo Pinelli, executed under the direction of Rinaldo Rinaldi, and that of Cardinal Angelo Maï, executed by Benzoni.

Germany.—Kaulbach has recently completed the cartoon of a large wall-painting which he intends to present to the National Germanique Museum, and which represents the Opening of Charlemagne's Tomb, at Aix-la-Chapelle, by Otho the Great.

Paris.—The erection of a monumental Fountain at the entrance of the Bois de Boulogne is under discussion. It would face L'Avenue de l'Impératrice, and be of colossal proportions.

Brussels.—The current number of the *Journal Belge de l'Architecture* contains an engraving of the design by Mr. Durham for a memorial of the Great Exhibition, which was selected by the committee as the best.

New York.—The 33rd Annual Exhibition of the National Academy of Design at New York, now open, comprises 636 works, the largest number yet collected by the Academy. It includes 250 landscapes and 100 figure subjects.——The American Institute of Architects has been holding meetings. The *Crayon* prints a paper "On Style," read at the Institute by Mr. Leopold Eidlitz. The writer ends by stating,—"1st, that a critical examination of the architectural monuments of the world, and their classification by others, may lead us to a selection of the best and purest, for the establishment of a school of architecture as a basis for future action; that the establishment of a school of architecture is imperative, if the American Institute is to make a mark in architectural progress; 2nd, that a series of papers, embodying such critical examinations, in connection with another series on æsthetics and consequent debates upon these papers, may lead to the establishment of an acknowledged school of architecture."

THE DEBATABLE LANDS OF THE METROPOLIS.

A SHORT time since an action was tried in one of the courts of law to decide the point where "Father Thames" ceases to be a river, and, having fulfilled his mission, like other rivers, both great and small, mixes with the ocean. It would be more difficult to decide the suburban boundary, where the buildings can be considered as separated from the vast city. Certainly a line has been drawn to mark the district, which is under the management of the Metropolitan Board, and within these bounds considerable improvement has been made in the arrangement and condition of dwellings; and yet so great is the increase of population, and so sudden the changes which every now and then take place in the suburbs, that neighbourhoods of considerable extent are permitted to be reared in the old-fashioned state of neglect in consequence of being just a little bit over the boundary.

It may be noticed, that along the divisions of parishes there is a sort of debatable land, which is worse conditioned than other parts: Belle Island, for instance, is in the parish of Islington, but is close to the boundary of St. Pancras. We give an engraving of some dwellings here, which may be taken as a sample of many others in a similar position. Three or four years ago we gave some account of those dwellings and the adjoining manufactory. As regards the latter, the black smoke seems to be now consumed, and the people who live around do not complain so much of the unpleasant smells from this neighbourhood; they have, however, not been got rid of, and although it is said by some that they are not unwholesome, they are anything but agreeable. Certainly much ingenuity has been displayed in the erection and contrivance of some of the chimneys here, which are unlike any other architectural feature of the metropolis. As regards the poorer sort of dwellings, but little, if any, improvement has taken place. The engraving gives but a faint notion of the dilapidated state of some which are here situated. There is no drainage—one closet for a row of houses, and a pool of most offensive matter passes from the closet, and close past the doors and windows. The gutters along the broken roofs are filled up with weeds, the walls are green with damp, broken and mildewed. In some of the houses near the closet, the whole appearance is such that most persons would think they had not been occupied by human beings for some years: even in the worst of these we are told a man finds a home; in other of the houses there are families. In connection with these dwellings there is no water supply of any kind, and one woman said they depended for water chiefly on the kindness of a person who is not connected with the houses, but who occupies some places for the reception of cattle close by, which he has had thoroughly drained and supplied with water. The animals here are certainly better cared for than the human beings.

A policeman who chanced to come in the way, said he understood that the tenants, being very poor, were allowed to stay here without payment; this, however, was contradicted by the inhabitants, who stated that they paid 2*s.* a week for their rooms. It has been often a painful duty to refer to neighbourhoods such as this, for public notice has often led to the closing or demolition of dwellings, and the people find much difficulty in getting accommodation elsewhere. These are, however, dangerous places, and if it be not worth while to render them wholesome, they should be disused. We could mention instances of similar neglect to this along the edge of other parish bounds, and some may be noted in parts of the line of separation between the City and county. Even the division of police is at times attended with ill-effect; for instance, during the last cholera attack some parties near the bottom of Leather-lane, Holborn, proceeded to pump the contents of a cesspool into the street, and the matter ran over the wide footpath of Holborn-hill while hundreds of persons were passing. Although this nuisance flowed over a most important thoroughfare of the City from a house not more than a dozen yards from the City boundary, it was not within the duty of the City policeman to step a few yards over the border to inquire respecting the cause of this overflow; we do not know what may be the duty of the police in case of a fire taking place in a similar position.

In nearly all directions in the suburbs, houses have been planted without care for drainage or water supply, except such as can be obtained from unwholesome wells, many of which, in the course of a few years, must become quite as bad as those at Belle Island; and we fear that just outside the limits of the power of the Metropolitan Board of Works, advantage will be taken more largely to build dwellings for the industrious classes similar to those which have been such a source of mischief.

Our object in making these observations is that they may be the means of directing the attention of sanitary inspectors to the frontiers, where frequently more danger is to be apprehended than in other parts. The extremity of the metropolitan bounds should be watched with a vigilant eye, in order to prevent building on such places as parts of the Plumstead marshes, and the planting of numerous houses where drainage is almost impossible—spots in which the refuse, instead of being carried off, is passed inland, poisoning the streams which flow into the marshes. Some think that it would be well to extend the radius of the London boundary four or five miles farther, in order to take in effectually such suburban buildings as may be reared during the next century. At any rate, some plan should be devised to prevent the erection of undrained houses in the country as well as in the metropolis and large towns, for the value of human life is equally great in both places.

A DISCOURSE ON THE BEAUTIFUL AND THE FINE ARTS.*

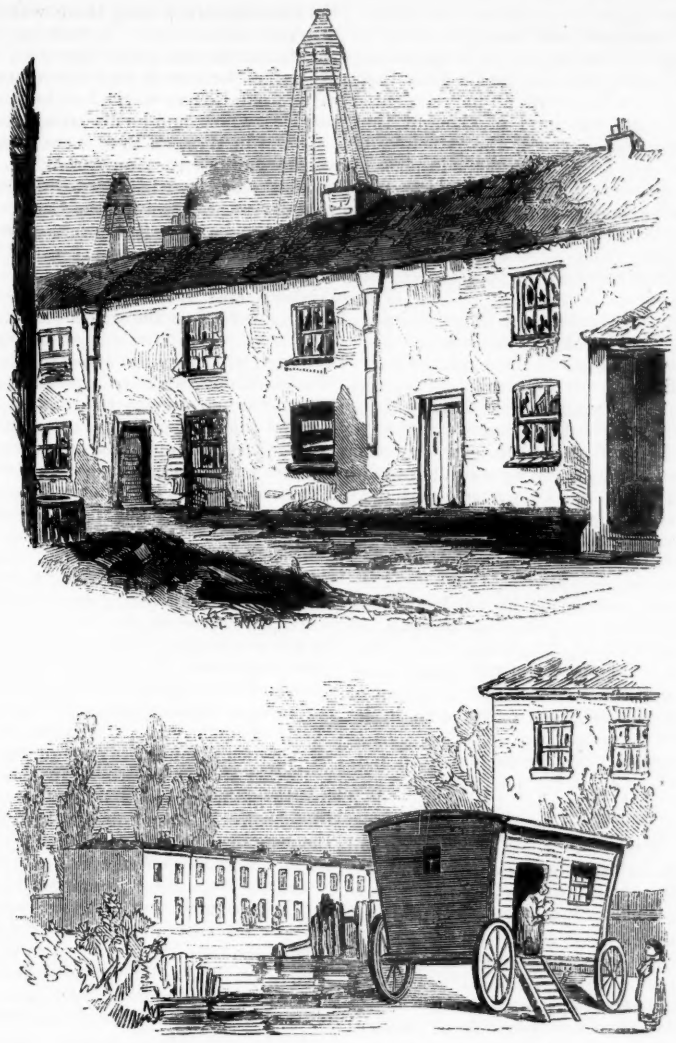
THE arts of the Egyptians had no doubt been passing through a gradual decadence for many ages, before the final overthrow of the nation by the Persian conquest. The conquerors, moreover, did not (as the Romans did with the Greeks), appropriate to themselves the arts of the subdued people. The Persians had attained to the position of art development, it is true, but their style of art, such as it was, became developed more in accordance with Assyrian than Egyptian, because, in fact, their national character was of the one cast and not the other.

But about this time the energies of fine art were beginning to germinate in another land, and in new form, among the Greeks. It is a common doctrine that Greece derived her arts from Egypt. Even those who dispute this as matter of fact, will say that Greece derived her art from Assyria and Persia; and both classes of theorists will unite in demanding, if both theories be rejected, whence otherwise could art have been derived at that time? But we ought to consider whether these suggestions are not altogether grounded upon an erroneous principle,—whether the law of derivativeness be law or not. It had certainly been held among ourselves for some time to be a law, that the first origin of a style of art in any given country must, of necessity, be traceable to the previous style of some other country. But this, I submit, is no law of universal application. There are cases in its favour, but there are many against it. Even when one country has directly communicated to another the first suggestions of design, we generally find some new characteristic speedily introduced, upon which the young style is moulded, in obedience to the invariable law, that style shall correspond with the characteristics of mind. We shall find very few cases like that of the Romans, where another nationality could definitely claim the merit of furnishing them with a style to be completely or even essentially adopted.

There is sufficient evidence, I think, to admit of our assigning to Greek art, in every department, the credit of national originality. The gradual rise of sculpture, more particularly of painting, of architecture, and also of poetry and the drama, can be distinctly traced on Greek soil. Whatever suggestions may have come from Egypt or Assyria, in the course of ages, they were lost in the unproductive or preliminary period of effort: when the Greeks started fairly on their course, the principles they developed were *their own*.

The law of the influence of national peculiarity of intellect was very clearly evidenced from the first. While the Egyptian religion, for example, was a worship of vague and mysterious ideas of a hidden world, that of the Greeks was essentially a worship of the *beau ideal* of the present world in its own proper shape. Take the public games: in these great festivals the whole people were convened to pay homage to manly strength and mental vigour. The judges were solemnly sworn, the candidates publicly challenged; no slave, no barbarian, no vicious person was admitted; the judgment was pronounced in the face of all the multitude; the victors were crowned with acclamation, and carried home in triumph, and statues of honour were awarded to them at the public cost. All this was the worship of the beautiful. Not only wrestlers and racers, but poets, dramatists, and sculptors, presented themselves for the judg-

* See p. 348, *ante*.



DEBATABLE LANDS.—*As the Home, so the People.*

ment of the crowd. "The multitude is the surest judge of works of art," said not only Cicero the orator, but Aristotle the sage. If such a people should fail to win the laurels of universal history, then could we put no faith in manliness.

The primitive remains of the Greeks are rude. Then came Thales, Solon, and Pythagoras, in philosophy; Sappho in song, and Anacreon and Homer in the epic; and Thespis converted the mimes of the Bacchanalian dancers into a primitive performance on the stage. Then came on rapidly the age when Æschylus in the heroic, Sophocles in the pathetic, Euripides in comedy, Aristophanes in burlesque, carried the drama swiftly through its brilliant career; when Pindar sang; when Socrates, Herodotus, Plato, Thucydides, lived; when Pericles swayed Athens; when Phidias and Apollodorus, in sculpture, and Polygnotus and Zeuxis in painting, to be followed speedily by Praxiteles and Apelles, brought art almost out of nothing to the utmost perfection of the ancient world. This was the culmination of Greek excellence: it passed across the face of Hellas like a dream.

The position which the fine arts now attained was this. Of the architecture (which is too well known here to require any description), we may argue now-a-days that it was monotonous, and had occasionally a solitary, although exquisitely refined imperfection, that the pedantry of the academy was perhaps too much displayed in the correction of optical deflections; but as a whole the design of the Greeks, looked at philosophically as an advance upon pre-existing examples, has never been equalled yet. In sculpture a perfection was attained which was vastly greater still, and is to this day the standard. In painting the advancement was much less. Compared with Egyptian drawing that of the Greeks was all perfection, but the style was entirely statuesque, and the colouring, although cultivated with success down to the time of Alexander, never reached beyond a very primitive description of light and shade. In poetry (still the first-born of the arts) the chief work was the collection by Pisistratus, of the ancient heroic bard songs of Hellas into the form of the epics of Homer. The drama was finished of its kind, but tedious, pedantic, and crude. Music was little better than a refinement upon that of the Egyptian period, a chorus of intonation; except that as poetry had acquired rhythm, so music, also, had acquired some degree of measure. The natural principles of the diatonic and chromatic scales were also understood; Euclid wrote a treatise upon this subject, which was so far complete.

Greek art is to the full an illustration of accordance with national character. Clear-sighted and brilliant to a degree which astonishes us; with an intimate study of nature which is a miracle of patient industry; with an appreciation and critical knowledge of the beautiful which seems to have constituted their very religious faith; and with a refinement of judgment, which, if sometimes pedantic, was always performed; the first and last of their art were cloudless as their own blue sky, and steadfast as their rocks.

It is a universal principle of the development of any school of art, that it exhibits a long preliminary period of vague and abortive effort, a somewhat sudden awakening, a rapid culmination, and then the immediate commencement of a long decadence, seldom interrupted, inevitably fatal. It may be suggested that this is only, in other words, an assertion of the law of the rise, culmination, decline, and fall of nations; but the two progresses are not perfectly identical. The summit of the artistic flight does not always correspond with the summit of the national greatness. Neither does the highest point of *activity* in art always correspond with the highest point of artistic *excellence*. Although it is true that artistic progress originates with material and moral progress, yet it does not necessarily follow a parallel course.

Many of the developments of art have died away in the preliminary stage; some, for instance the Persian, have perished under the sword of the invader when rising into active life; one, the Greek style itself was paralyzed by intestine strife at its very zenith; and, indeed, the same may be said of the modern Italian, while the Egyptian, the Roman, the Gothic, and, indeed, most others have passed away in tedious and decrepit old age.

The *rationale* of the preliminary stage is simple, and that the perfection once attained should be tenaciously imitated when the genius which created it had been lost, it is not difficult to understand; but the remarkable rapidity with which fine art rises to perfection when once fairly on the way, demands some explanation before we leave that exquisite period of art-history which exemplifies so wonderfully the operation of this law. So wide is the distinction between the act of mere advancement and the act of commencement, between improvement and invention, that, after the whole force of collective effort has been wasted in vain for ages, groping in the dark, no sooner does good fortune at length cast an accidental ray of new light upon some one of the workers, than all seems easy. The road was open before, but it is now visible: and human genius runs joyously in it and with all its might towards the goal.

Out of this train of thought there may naturally arise the question, how it is that that uniformity which we call style happens to lay hold of the entire mind of a nation or a period. The drawings on the wall exhibit in contrast, the several styles of delineative art of several periods. The subjects are selected as fair types of the styles and such as may be fairly compared together. The question is this: if the same problem of design be offered to the several minds of these several periods or nations, why is it that they should not all take the same view of the same subject? And, if not so, let the same problem be offered to several minds of the same period or nation, and why is it that they *should* all take the same view of it? Why does every man follow his father and take the same track as his brother? If fancy be so free a thing as it proverbially is, there ought to be none of this dependance, none of this beaten track.

What is the mind of the artist? or, indeed, any mind? I call it a mill. Here is the raw material; here, the machinery; there, the finished product. Those constitute the cause; this is the effect. The cause and the effect are equivalent; they always are. It is true that there is in this mill more mechanism than we can describe; it is true that the movements of its electric wheels are more rapid than we can measure; it is true that the eye cannot peer in at the window, nor the ear listen at the door; that its busy work is done in secrecy and in silence; but thus far we may know and affirm, that nothing can come of nothing, and that the product at the last must have been material at the first. Observe its channels of communication with the outer world and outer minds: through these there are continually flowing in currents of material which we call perceptions. In its hidden chambers of repository these float like a vapour, or vibrate like a tone, from infancy to age. All the day long is the engine working in thought; and in the night its busy nerves are working still in sleep, removing the waste, repairing the exhaustion, repolishing the wheels, trimming the sacred fire, and marshalling in order the stores of reminiscence. When the judgment is in action, the fancy in request, all its ceremonies are quivering. A thousandfold more swiftly than the thought can follow (for they are themselves the elements of thought), do these mysterious and subtle things play their silent but restless part. From innumerable secret hiding-places these innumerable influences pull the innumerable strings of will, and the tongue of wisdom, the pen of the poet, the hand of the painter, is impelled.

There is therefore nothing here that is uncertain, nothing that is arbitrary; here is the material, there is the product, whether it be philosophy or wit, discovery or invention, reason or imagination, science or art, nothing comes out of the mill of the human mind but the product of that which in another form has first passed into it as material. According to the education, therefore,—according to the associations in the storehouse of the mind, so will be the operation of the fancy; and hence the trammels of style, hence the fatherhood of every age to its successor, hence the slow progress of human advancement as a whole, and hence—let me also take this opportunity of impressing upon you—hence the necessity for that systematic education for the artist which for the last few years I have ventured to inculcate upon my professional brethren, and still mean to continue to do.

Have I rightly understood that it is argued against this demand that education will only raise up dulness to mediocrity and debase genius to the same level?

What then is genius? Is it a scintillation on the sea, that comes and goes, we know not whence or whither? Is it a sacred fire smouldering in hidden corners, and touched into flame now and again by the wand of some magician in the air? Is it a breath from the invisible world, which fitfully breathes upon our dry bones and they live? It is time that men of ability should waive all such pretensions,—their genius is no such necromantic thing. If it were better known in its own simplicity, it would be better used. It is a fire burning more brightly than common, I know, but that is all; it is a harp more delicately strung than others, but nothing more. It is a mind like other minds, a mill like other mills; but happily, in respect of some one function or another, by the favour of God, of a mechanism more powerful or more free. Nothing can be more fatal to genius than to imagine itself another thing than merely judgment of the best, to be instructed as judgment is to be instructed, and controlled as judgment is to be controlled. To be endowed with this brilliancy of intellect is a great gift of nature: it is better than riches of possession, or nobility of rank; but it is so good a gift, that it ought to be gratefully cherished, patiently cultivated, and humbly worn.

The zenith of Greek art was attained under the great artists I have named, in the age from Pericles to Alexander. The patriotic combinations occasioned by the assault of the Persians may be said to have called forth that national spirit which produced this culmination; the internal dissension and ruin springing from the Peloponnesian war produced the decline; and after the time of Alexander the arts were fast falling away.

But the Romans, 200 years afterwards, still found enough of artistic fire among the embers of ancient Greece to give warmth to the world for centuries more. The flickering flame was not destined to die out on its own altar, but to be transmitted, even in its feebleness, to the temples of another empire. It was to be fanned into new life, carried over all the earth, and its decline protracted until the young world which now came to worship it should itself, in the extremity of age, fall slowly and solemnly to the ground.

In this we have the most celebrated illustration of the principle of directly derivative art; for the Romans,—whose art-development at this time was below zero,—who, in fact, possessed in Italy no fine art other than sculptures of the same class as those of the Pelasgic forefathers of the Greeks in their day, expressed their admiration of the ancient remains without disguise. They bore them away as art treasures, and formed collections and galleries of painting and sculpture. They carried the Greek artists personally to Rome. They adopted the Greek drama in its entirety. They took Homer for their master in poetry. But go farther, and we see the reason for all this. They adopted also the philosophy, the manners, the very religion of Greece; it was only because they were able to assume the Greek mind as a whole that this appropriation of the Greek school of art became possible with them; and it was only because their own essential principles of national peculiarity happened to be the same as those of the more ancient people that this assumption of the foreign mind was admissible at all. The Romans acted by no arbitrary or even dogmatic impulse; they abandoned nothing of their own; they found by accident the perfection of the Roman mind, and the Roman mind entered gladly upon it. The Romans were the *natural* successors and pupils of the Greeks.

The Greek school of the arts continued in the main to decline steadily under the Romans. Architecture, the art of the proud, was chiefly encouraged, but its chasteness was lost in magnificence. Sculpture was cultivated only as an art of portraiture. Painting stood still. Poetry died out. The drama gave place to gladiatorship. If music advanced (for Nero kept 5,000 musicians in his personal service), it was perhaps little more than in the form of monster concerts of intonation and very simple accompaniment.

Towards the fourth century this school of art had at length almost quite died out. The Roman empire was breaking up. The removal of the seat of government to Byzantium—Constantinople—was but an escape from the coming struggle. Christianity, moreover, was growing into importance with its new principles of thought; so much so, that the government of the Roman empire itself saw it now to be a matter of necessity to devise a compromise between the new creed of the people and the old traditional religious policy of the empire, and thus to establish so-called Christianity as the faith of the world. The Church then came into power.

The Church soon laid hold upon the mind of mankind throughout the empire. The barbarians, or Western invaders, who now made Italy their head-quarters, bowed to it with an unprecedented homage. The new principles of thought thus enthroned in the human spirit, the principles of suffering deified and self-denying hope in place of power and pompous authority in high places, produced a revolution in society at large throughout its every vein and nerve. Fine art, never idle, changes with every change, and as the world had become Christian of this sort, art became Christian of this sort too.

But the revolution was too profound: the change was too vital. The world had to become much worse yet before it should become much better: it had to lie down for a dreadful sickness of a thousand years—and art must lie down with it. The intellect of man had to come very near to death's threshold—and art had to come very near it too. It would rise up some day—and art would rise up with it. It would be strong again—and art would be strong. It would be young again when the long winter was gone—and art would be young and fresh again like the spring flowers.

If the arts do not keep pace together when they are at their best, neither do they fade together in their weakness, nor spring up together in better days. At the period now in question they died away each in its own time, and were buried among the shadows of the Dark Ages; and out of this tomb we shall find them again, each in its own time, rising up.

The Dark Ages served a great and good purpose in history. To affect any sympathy for them,—to say that they should not be visited with such hard measures as to be called Dark Ages,—is only to affect to think it a pity to call the winter, for instance, by such a very cold, unkind, and wintry name. These Dark Ages were the baptismal time of the Christian world. It went down into their dreary waters a grim Pagan and barbarian world, to rise up with a better and a happier face,—a world of pleasing promise.

Architecture was perhaps the last of the arts to sink into utter feebleness: the pride of imperial Christianity still kept it up. Painting passed into mosaic and tapestry: as for sculpture, it was pronounced an abomination, and the statues of Phidias and Praxiteles were publicly put upon their trial with halters round their necks, and pounded to powder as anti-Christ. Poetry there was none; the dogmatic dialectics of the faith had supplanted it. Music alone may be said to have suffered no decay. When the Christian chanting took the place of the classic chorus and the barbarian lay, no doubt it assumed a very dreary and desolate character, as the congregation of voices drawled forth, without concert and without expression, and in all the notes of the octave together, a sorrowful whim of intonation, to whose measureless course prose and verse, or whatever else, were all alike. But as early as the fourth century, St. Ambrose and St. Augustine had begun to introduce the germs of system, so that the worshippers, as they said, should "no longer languish and pine away in tedious sorrow;" and in the 6th St. Gregory the Great had formed a code of rhyme, if nothing more, and intonation began to assume the form of melody.

Look, now, at the Dark Ages themselves. To architecture the Byzantine and Romanesque styles were of little value indeed; the corresponding schools of painting and sculpture of still less: and poetry had sunk into monkish legends and the romantic epics of the Nibelungen, King Arthur and his round table, Charlemagne and his peers, and the like, and some feeble presentments of historic passages, sacred and profane, and Homeric and Virgilian incidents; just as learning had become the sole heritage of the monks, and dialectical controversy their chief good. Music alone still advanced; the organ (such as it was) became distributed over Europe; and although for centuries it attempted no more than to lead in unison, and that still without much of melody, it presently ventured to strike a feeble concord of the third at the end of a chant (which was called organizing), and out of this at length there was discovered the fact that two melodies, as was said at the time, might be played together (which was called double chant or descant), the foundation of harmony.

All this while the Saracens did good service in art and learning, but not so as to produce much influence upon future history, or to demand attention here.

But even the Dark Ages were not without a good spirit of their own: it would be a dark day indeed if the sun were not to shine at all. For the third time in history there was rising up an original spirit of art. It was the new mind of the Christian barbarian, the Goth we call him. He dallied for a while with the decaying principles of the old Roman world, but he found they had no efficacy now, and he discarded them all.

It was in Western Europe that this new runner of the glorious race appeared. He came out of the darkness, for what little light there was at that day was far away in the East. But so be it: out of the darkness there were springing up now strong nationalities, not very courtly as yet, but fresh and young at all events; whereas in the brighter East the old nationalities were only waxing more stale and withered. New languages came into form, new sympathies became settled, new patriotisms arose—above all, an independent Western Church was now dominant under the popes. The crusaders carried these ideas to meet the ideas of the East on their own ground. Chivalry arose; Constantinople was visited, although somewhat rudely; the Saracens were vanquished; the Troubadours wandered over Europe, and the spirit of fine art found its way into the Gothic kingdoms.

The old world, which had lain down in weakness a good many ages ago, was now beginning to show signs of that renovation being in some degree accomplished, for the sake of which it had pleased God to plunge it into this desolate case. The old Roman elements had been so far purged away, and the new elements of the coming time were springing into being out of the barbarism of the West. Presently this Christian world would be strong enough, and wise enough, to pass into still a further stage of destiny; in the mean time it had to gather itself well together, and put itself to school. It is not for us to find fault with the way in which this was done. If there was conflict, and oppression, and intolerance, monkery, and the inquisition, and many a horrible pit, we can believe now that all this was for the best, seeing that the thing to be accomplished was no easy thing. And so, in the meantime, I say, the Papal church consolidated itself, and became firm, and strong, and rigorous. And it set itself to read old books, and painfully to multiply copies of them.

It was as the church became powerful and magnificent that fine art was again introduced. The people were simple, and the kings were poor; but the priests were neither. If the now increasing communion with the Eastern world and Italy (Italy being the outpost of the Byzantines in respect of art) all this while gave to the Western priests the first hints of artistic practice, these hints were soon left far behind. I need not describe to you how the eleventh century saw springing up in France and Germany, and ultimately in England, great ecclesiastical edifices in a style of design which for four hundred years became amplified and elaborated in every successive effort; or how these cathedrals and abbeys soon added to the glories of architecture those of refined decoration,—carvings, sculptured figures, stained glass, tapestry, and paintings. And I need not tell you that, if anything was borrowed from either the Byzantines or the Saracens, it was never at the sacrifice of that peculiar spirit which, however unrefined in many points, was a thing to be boasted of as a thing purely of the Western and the Christian mind. The Gothic style of architecture and ornamental art, of sculpture, and of painting was, in obedience to the unalterable law, a homogeneous whole.

Architecture was necessarily the favourite form of artistic development under the particular magnificence of an ecclesiasticism like this, and certainly the character of this art was perfectly suitable to the period which produced it, when the ideal grace of the Greeks and the idle voluptuousness of the Romans had given place to the wilder energies of the Northern blood, the more picturesque associations of Northern climate, and the sublimer sympathies now springing up of Christian faith. Of painting and sculpture little need be said but that they were very far behind their sister art in progress. Poetry had small encouragement from the monks, but grew up and flourished as the art of the people. Music made considerable progress as an ecclesiastical accessory, and, in fact, it was by the rude descant of the Dark Ages that the system of the modern gamut was discovered, and the whole science of counterpoint systematized for practice.

Towards the close of the Gothic period of art in Western Europe there was coming into operation in Italy what is called the revival of ancient art. Italy, all through the Middle Ages, had been inspired from Constantinople as the seat of intellect; and, when the Byzantine empire yielded to the

rapacity of the crusaders, and afterwards trembled before the threatenings of the Turks, the artists and men of letters, obliged to seek refuge elsewhere, began to pass in great numbers into Italy. The modern Italian mind was able to grasp this welcome gift and mould it to new characteristics, and the result was what is commonly called a revival, but what I venture to maintain was not so, but a new effort of original national genius to correspond with a new phase of social development. This new developmont of society had established its head-quarters in Italy. It was destined to be the basis upon which the overthrow of the feudalism and ecclesiasticism of the Middle Ages was to take place, to make way for the polity of modern Europe. The cities of Northern Italy had been brought into being by what may be called the rise of *trade*. Commerce is the mother of modern freedom; the merchants of the new commonwealths constituted them republics, and the little republics became the great powers of the world. The republics of ancient Greece were the seeds of the coming Roman world. The republics of modern Italy now were the seeds of the coming modern European world. The republics of the Anglo-Saxon colonies in our present time seem in their turn to be similarly destined to prove the seeds of still another development of human progress. But at all events, as early as the eleventh century the republics of Italy were becoming the first head-quarters of a new species of intellect—the intellect of the present day. Art becomes a necessity with every new intellect, as we have always seen. Art in Italy was not altogether absent; but it was on the poor dead level of the preliminary stage; it was groping in the dark. The cities sent for Byzantine artists. These brought a gleam of light: this was enough. The native mind took up the case. Cimabue led the way to a new school of painting, Dante and Petrarch to a new school of poetry, and presently Brunelleschi to a new school of architecture. At the same time the awakening mind began to knock hard at the door of philosophy too, and to demand of the scholasticism of the Church a fair hearing.

It was the last of these measures which gave rise to the reference to antiquity: it was philosophy that required the help of the ancients, and not art. For long before this time the schoolmen of the Church had called in the aid of Aristotle; and now, in their turn, the Freethinkers called in the aid of Plato. Dispute ran high: Platonists with Aristotelians, Realists with Nominalists, the new light with the old light, science in the birth with priestcraft in its strength. It was out of this that there came the revival of ancient philosophy and literature, and the authority of ancient mode. Such was the thraldom of the Church, that nothing less dogmatic than its own principles could hope to stand against it.

To whom are we indebted for all this? To the Church itself. It had been reading up for ages, and thinking over what it read; and at length, in the fulness of time, it found itself strong enough and learned enough to begin to struggle with itself in a new birth, and the origin of modern science was the result, and the origin of modern art with it.

The Italian school began in the fourteenth century with Cimabue and Giotto, Dante and Petrarch. In the fifteenth came Masacio and Perugino, Brunelleschi and Alberti; in the sixteenth, the period was in perfection under Leonardo da Vinci, Correggio, Raffaelle, Giulio Romano, Michelangelo, Titian, Palladio, and, in poetry, Tasso and Ariosto; while, in music, Palæstrina was still in progress.

At this very time, the new light was breaking in another form in the Western kingdoms. That which had been done in Italy for the sake of learning, was now being done in Germany for the sake of manly virtue; and the reformation of Luther brought the Gothic mind to an end. The Italian school of thought now spread all over Europe; and in the seventeenth century, while Bacon, Descartes, Locke, and Newton opened up new fields of science, art was in the hands of Vandyke, Rembrandt, Murillo, Claude Lorraine, and Poussin; Inigo Jones and Wren; Shakspeare, Cervantes, Milton, Dryden, Corneille, Molière, and Racine. In the eighteenth century and the beginning of the nineteenth, their successors have been such as Thornhill and Hogarth, Canaletti, Wilson, and Gainsborough; Reynolds, Barry, Fuseli, Canova, Flaxman, and Banks; and so on to Wilkie, Turner, and Gibson; Vanbrugh, Mansard, Gibbs, and other architects, to Soane and Wilkins. In poetry, the drama, and romance,—Addison, Pope, Fenelon, Rosseau, Alfieri, and hundreds more, down to Byron, Scott, Goethe, and Wordsworth; while in the fascinating art of music (which the seventeenth century had perfected), we have the names of Handel, Gluck, Haydn, Mozart, Cimarosa, Cherubini, Weber, Rossini, Beethoven, and others. Science and general literature, too, have been well served by Reaumur, Voltaire, Johnson, and Gibbon; Kant, Fichte, and Compte, the geologists, and the chemists, and the men of the steam-engine, the railway, and the electric telegraph. The new light of modern society, which had its dawn among the Italian cities, 600 years ago, is at the present moment shining with such brightness of both art and science on our own land, that the Anglo Saxon believes himself to be, not the possessor of Heaven's present favour merely, but the established leader of the human race in a course of advancement only just begun,—the colonizer of the earth, the patriarch of a millennial age of prosperity and peace.

There is still another phase of art in history; and I must say one word upon this as the conclusion of my argument. The idea of copyism, antiquity, rule, precedent, and reproduction, has so taken hold of the mind of the present century, in some respects, as to constitute the most striking feature of the art of a new age.

The natural tendency of the revival of ancient letters would be to cause a revival of ancient art. When the freshness of the young Italian mind, as exemplified in the best men of the fifteenth century, should have abated—still more when it had spread over all the world, and lost in power what it gained in dominion—and thus, when it would begin to fall into indolence and decay, any dogmatism which might happen to lurk in its elements would become, with the many, the law—the law of style. And there was a good deal of such dogmatism.

Ancient philosophy was reproduced early, and the reproduction soon passed away before the triumphs of positive science, to which Bacon led the way. Ancient letters were brought into request all over Europe in the seventeenth century; and it is only now that the battle is being fought, which is to displace even in English schools the pedantry of the classics for the study of the knowledge of actual life. The revival of the mode of ancient poetry had but a feeble and vapid reign, and is now forgotten. The ancient drama is only known in the Westminster play of schoolboys. Classical music was incapable of revival; so was the painting of that period. The sculpture of antiquity was referred to in the last century by those who felt that the art was waning; and its revival has, at least, served the good purpose of directing the mind to that close study of nature which, especially in this art, was the all-in-all of the Greeks. In architecture, lastly, the practice of Palladian principles led the idle and the pedantic into the assertion of antiquity-rule to such a degree, that Palladio was followed back to Vitruvius, Vitruvius to the Roman ruins, and Rome to Athens itself; and when we stopped at the sight of Egypt it was because human credulity, patient as it had been, would no further go. But we were not prepared for open revolt; we had nothing to begin the world with. Revivalism habits had so laid hold of our architectural constitution, that we had no alternative but to go on in them somehow. We put the matter in a new form, however; the revived—the Gothic. For a long while this made no way, except that antiquarians wrote books about it of a very superficial sort; and architecture, some twenty years ago, was turning rationally towards its natural style again—the style of the present period of art in which we live—the Italian or modern European style before the Palladians came in, with their unlucky wisdom, when, as fortune would have it, there began to spring up in England a new ecclesiastical mind. The law of art development was now satisfied, and the old Gothic style of architecture was raised up in a sudden triumph, which has, perhaps, never had a parallel. But, suffice it to say, that if the Greek revivalists found no rest for their feet, but followed the *ignis fatuus* of dogmatic authenticity, farther and farther back till they stood aghast upon the borders of the desert; so also the Gothic revivalists, nevertheless, are at this moment following fast the same backward track—the acquisition of yesterday, the refuse of to-day;—and they are pushing on faster and faster still while the darkness of the tenth century is already close at hand.

True to their inevitable fate of fellowship, the other arts have bowed to the same impulse as this one; all have, more or less, gone together. Pre-Raffaellitism in painting, Gothicism of all kinds in the ornamental arts, Intonation and the Gregorian chant in music, have gone as far, and sometimes almost farther, than poor Pugin did in architecture. Poetry and romance have not gone so far; and if Shakspeare is at present produced in the perfect character of the period represented, this is as it should be,—it is not any following of the rule of antiquity, but a sound idea of art in the representation of antiquity. As for sculpture it has stood its ground well, and has little of Pre-Raffaellitism in it, if any: it is the characteristic of this art to be tenacious of its life.

That this remarkable reaction in art is in perfect accordance with a reactionary tendency in society in this country, I need scarcely say. How far it is likely to spread abroad to other countries, it is for those to predict who take more note of the signs of the times than I do. For my own part, I am only inclined to say, that this state of things will not last for ever; that it cannot last long; that we are already at the crisis of reproduction; that the entire principle will presently pass away.

But the vocation of fine art is not yet finished: the wide fields of its delights are not yet all reaped. If the next century of time should bring with it some great overthrow of existing incompatibilities, some breaking of chains and shackles,—whether by gentle or ungentle hand it matters not,—shall we say that fine art is exhausted, and can supply to the new time no new development? Not so: the pictures of the sunlight are only now beginning to operate on painting; sculpture has a whole universe of the heroic and the grand scarcely touched upon as yet; architecture has new materials and new purposes which are all ready to show themselves; and poetry, romance, music, and the drama, are inexhaustible as ever.

At last, to what does all this tend? Art is but child's play after all, perhaps you will say;—amusement and recreation, but nothing more;—a pleasant game to while away a leisure hour, snatched from the more important or the nobler cares of life. No; in following the footprints of the arts, I have been tracing the origin and history of a principle, precious among the elements of our being, really and truly so, and without a metaphor—a principle now so interwoven with everything about us, in ten thousand ways, that even where we scarcely value it, to dispense with it would be to change our nature—a principle which has a destiny to fulfil, a great good purpose in the universe to serve. Eternity is above all: virtue and holiness and the life to come are our supremest good: but amongst all the goodly things which have their beginning and their ending here—amongst all those things that perish with the using—the beautiful is of the best, the happiest, the freest from all guile. It is the destiny of our nature that wisdom in its relentless march should supplant our idols one by one; but to art, in its yet undeveloped fields, wisdom is no enemy, but a friend. Whatever may be overthrown, art will endure while the beautiful endures—while man endures. In the richer soil of ever-progressing intellect, in the pure moral air of better days—the pencil and the pen will blossom beautifully still, and still bear fruit, when the sceptre and the sword may be forgotten.

I have one word more to offer. It is now a good many years that I have been coming occasionally to this hall to say a friendly word, and a word of good-fellowship and encouragement to the young men of my profession. I have always let it be understood that whoever might be among my hearers, it was the young architect to whom I was speaking. When I was young myself the counsel I offered to those who were young with me was this: our profession, I said, whatever of business there may be in it, whatever of science, has something in it which is of a greater value, not greater in money's worth, but in intellectuality, greater than either,—of a very noble nature,—it has *fine art* in it. I well remember how a reviewer, in 1846, thought it enough to say of me, that I was one who actually put in a claim for architecture, to the effect that it was a fine art on a par with poetry and painting. If this claim had been so senseless, I think I should have discovered as much by this time. But I have not discovered it; and I think, on the contrary, that the reviewer of 1846 would be a hardy man to say in 1858, that architecture is not a fine art on a par with poetry and painting. Since 1846 the fine art of our profession, if nothing else belonging to it, has competed with all the world, for Lille, for Constantinople, at the Paris Exposition, and in Westminster Hall—and it has always won the day. Am I not emboldened, then, to repeat to young men to-night my old counsel—to look well to the *art!* I grant that it would be folly in any one to advise that science and the business of life should be neglected, and I hope I have never been chargeable with such an error; but what I

have always thought, and still think, and think from experience, is this, that science and business are less difficult of acquirement than fine art is—that, to a great extent, *routine* will look after them, but that routine will never look after fine art. I have only, therefore, to say again what I have so often said here before, let the fine art of your profession be your chief delight; but I have now to add a further element in the principle, an idea for which I demand your careful consideration after my sketch of to-night,—that in the contemplation of your own one art you do not forget to cast a glance from time to time all round the harmonious circle in which that one is only one of many magic stars, of mutual origin, of mutual influence, of mutual history, of mutual aim and end.

ROBERT KERR.

CHRONOLOGY OF THE FINE ARTS.

	EPOCHS.	POWERS.	PHILOSOPHY.	POETRY.	MUSIC.	SCULPTURE AND PAINTING.	ARCHITECTURE.	
1500	Egyptian	Rameses	Egyptian and	Moses	Psalms and	Idols and	Thebes	1500
		Sardanapalus	Assyrian	David	Sacred	Picture		
1000	Assyrian	Nebuchadnezzar	Priestcraft	Homer	Dances, &c.	Records.	Babylon	1000
600	Persian	Cambyses	Pythagoras	Anacreon	Rhapsodies	Ornatus	Persepolis	600
500	Greek	Pericles	Socrates	Æschylus	Greek Chorus	Phidias	Athens,	500
400		Alexander	Aristotle	Aristophanes	Greek	Apelles	Greece, and	400
300		Roman	Euclid	L. Andronicus	Gamut	Greek	Ionia	300
200		Republic	Cato	Terence		Emigrants		200
100	Roman	Augustus	Livy	Virgil		Roman	Rome	100
0		Nero	Pliny	Ovid	Early	Portrait	Vitruvius	0
100		Hadrian	Justin. Martyr	Juvenal	Christian	Statues	Roman	100
200		Diocletian	Div. Cassius		Chanting		Empire	200
300	Eastern	Constantine	Athanasius		St. Ambrose	Byzantine	Constantinopl.	300
400	Christian	Theodoric				Religious	Byzantine	400
500		Justinian	Boethius	Monkish	St. Gregory	Effigies and	and	500
600		Mahomet		Legends	Organs	Mosaics	Romanesque	600
700	Western	Charlemagne	Iconoclasts	and	in Unison			700
800	Christian	Alfred	Saracenic	Romances	Organizing	Byzantine	Saracenic	800
900		Otho	Learning		Descant	School	Mosques	900
1000		The Normans		Troubadours	Modern	reaching	Western	1000
1100		Crusades	Inquisition	Abelard	Gamut	Italy	Ecclesiastical	1100
1200	Modern	Italian	T. Aquinus	Dante	Theory of	Cimabue	Gothic	1200
1300	European	Republics	Wickliffe	Chaucer	Counterpoint	Giotto	Wykenham	1300
1400	Revival	The Turks	Printing	Ariosto	Gafforio	Da Vinci	Brunelleschi	1400
1500		Leo X.	Erasmus	Tasso	J. De Pres	Raffaelle	Alberti	1500
1600	Reformation	Elizabeth	Luther	Spenser	Palæstrina	Michelangelo	Palladio	1600
		Charles I.	Bacon	Shakspeare	Opera Music	Vandyke	Inigo Jones	
1700		Louis XIV.	Newton	Molière	and Orchestral	Claude	Wren	1700
		George I.	Kant	Pope	Handel	Vernet	Stuart	
1800	Revolution	Louis XVI.	Watt	Voltaire	Mozart	Reynolds	Chambers	1800
		Napoleon I.	Humboldt	Byron	Haydn	Canova	Nash	
1850	Reaction	Victoria	Stephenson	Scott	Rossini	Turner	Pugin	1850

NOTE.—This table must only be taken as a very general sketch of history, and by no means methodized even as it might be. Moreover, when I can only insert one name in a column for a whole century, it must not be expected that parallel names shall always mark contemporaneous persons.—R. K.

THE BUDRUM MARBLES IN THE BRITISH MUSEUM.

THE collection, which reached England in July, 1857, conveyed in the *Gorgon*, and which had been excavated at Budrum (the ancient Halicarnassus) under the personal superintendence of Mr. C. T. Newton, Vice-Consul at Mytilene, has been distributed in such parts of the British Museum as could be temporarily provided for its reception. The large sculptures have been placed in a temporary apartment formed under the colonnade of the south-front of the Museum, in which place the various fragments are being rejoined and arranged. The minor sculpture and fragments, with the mosaics, have been deposited in some rooms of the basement under the northern portion of the library.

The principal portion of this collection consists of architectural and sculptural remains of the Mausoleum erected by Artemisia, queen of Caria, to her deceased husband, Mausolus, about B.C. 350. This monument, of which the site was first positively identified by the excavations of Mr. Newton, was esteemed by the ancients one of the Seven Wonders of the world, and is recorded to have been embellished by the sculptural skill of Scopas, Timotheus, Bryaxis, Leochares, and Pythis. Our readers will remember a letter from Mr. Newton on the subject, which appeared in our pages.

Availing ourselves of the official report of Mr. Edward Hawkins, we may state that the remains of the Mausoleum brought by the *Gorgon* include five marble fragments, forming when united, the principal portion of a colossal horse, supposed to have belonged to the Quadriga, sculptured by Pythis, on the summit of the pyramid surmounting the building. On the head of the horse remain the bronze head-stall and bridle, which are believed to be the first examples discovered in modern times of a method of decoration habitually employed by the ancients. The horse is nobly formed, and brings into the mind Abd-el-Kader's reply, not long ago, when asked seriously for some information as to the origin of the Arab horse:—"God," said he, "created the horse out of the winds, as he created Adam out of dust. Many prophets have proclaimed that when God would create the horse he said to the south wind, 'I would bring forth out of thee a creature: be thou, therefore, condensed.' Then comes the angel Gabriel, and taking a handful of the matter, presented it to God, who formed therewith a brown-bay horse, and said, 'I name thee Horse, and create thee Arab, and give thee a bay colour. I attach blessing to the forelock which falls between thine eyes; thou shalt be lord of all the animals. Thou shall fly without wings, and from thy back shall proceed riches.' Then marked he him with a star on the forehead, the sign of glory and blessing." Whether the hoof placed as if forming part of the near hind-leg could have formed part of the group originally is doubtful. It would seem to have belonged to a larger animal. Continuing our notice, there are:—

A colossal male statue, draped and erect, discovered in numerous fragments, which, having been now rejoined, present, with the exception of the arms, a nearly complete figure. The head exhibits a portrait conjectured with some probability to be that of Mausolus.

A colossal female figure, also draped and erect, without the head, hands, and left foot, but otherwise in fair preservation, though, like the preceding, discovered in fragments.

A standing lion, of which the legs only are wanting, in fine preservation, and exhibiting the remains of paint in the mouth.

Portions of at least seven other similar lions, more or less mutilated.

Four slabs, and several fragments of slabs, from a frieze of the building, representing in high relief an Amazonomachia.

All these sculptures are executed in a style inferior only to that of Phidias, and form the most valuable representation yet discovered of the Greek school of the fourth century B.C.

The architectural remains of the Mausoleum which accompanied the sculpture include part of an architrave, a capital, base, and part of the shaft of a column, all of the Ionic order, and on a large scale.

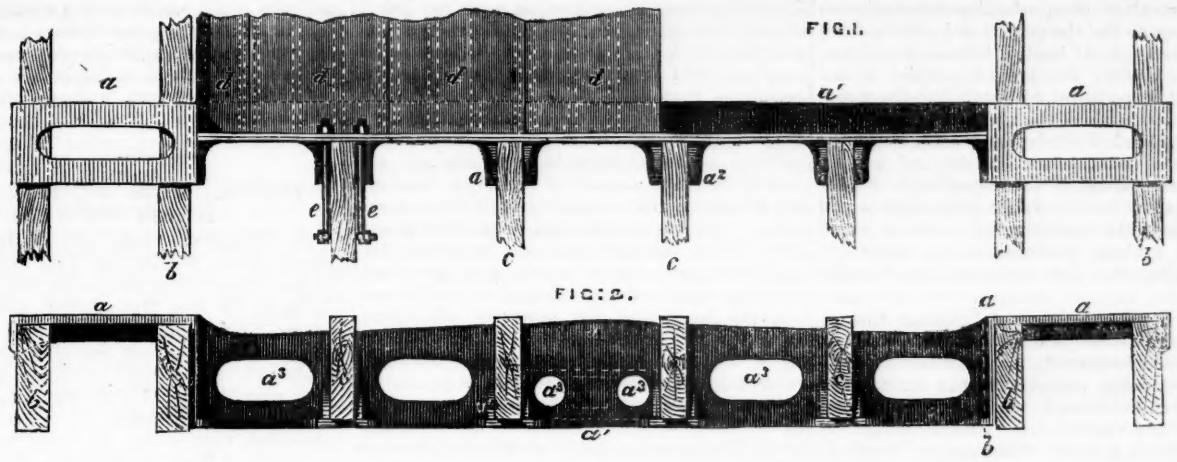
We mentioned not long ago that the antiquities in the Museum had been rearranged and labelled in groups, and great credit is due to Mr. Hawkins and his assistants for what has been done. It may be carried even further with advantage, and we would suggest that some of the pieces are placed too high. The bust of Cleite, for example, that most beautiful of all the antique busts, is at least two feet too high for a proper appreciation of its elegancies. If Mr. Hawkins will take the trouble to look at it, we shall find it altered when we next visit the Museum.

At the Institute of Architects last week Mr. Octavius Hansard, having presented the parliamentary papers on the Budrum marbles referred to above, sketched pithily their history. We prefer to print his observations here, rather than in our report of the proceedings at the Institute. He said the subject was especially interesting to the Institute, as it was owing to the exertions of the architects of this country that the Government had first been roused to obtain possession of these valuable marbles. Since the writings of Pliny, Vitruvius, and others, describing the Mausoleum of Mausolus at Halicarnassus, no notice seems to have been taken of the remains until 1404, when the Knights of Rhodes took possession of Halicarnassus, and erected the citadel, calling it the Castle of St. Pietro, which, according to Fontanus, was built from the remains of the Mausoleum. In 1472, Cepio, in the expedition of Mocenigo, refers to these remains. In 1480, and again in 1522 the castle was repaired with the marbles. Mons Guichard, in a work entitled "Funerailles des Romains, Grecs," &c., published at Lyons, 1581, mentions that much valuable sculpture was remaining upon the site, and particularly refers to the marble steps, friezes sculptured with battle subjects, &c.

In Dr. Clarke's Travels, published 1810-23, he mentions that Mr. Morett, in 1795, visited Budrum, and was so struck with the fragments he there saw, as to report that they were equal to those from the Parthenon, then recently imported by Lord Elgin. In 1811 the eminent hydrographer, Capt. Beaufort, contributed, through the Dilettante Society, much valuable information on the architectural monuments which he visited on the S.E. coast of the Adriatic. Between this period and 1839 many architects visited these remains, amongst whom were Mr. Cockerell and Professor Donaldson. But it was not until Mr. Fellows (now Sir Charles), under the auspices of the Geographical Society, in the latter year, visited the cities of Asia Minor, that we fully knew the valuable remains of antiquity they contained, and amongst them those of Halicarnassus.

This report led to the Architectural Society, at that time in existence, Mr. Tite being their President, forming a deputation to Lord Palmerston, the then Secretary of State for Foreign Affairs, which was followed by "A Memorial" from the Institute of British Architects to the Government, which received answer from Lord Palmerston, that he had instructed our ambassador at Constantinople to get permission of the Porte for the removal of these marbles; and which was soon obtained.

In 1846 Mr. Charles Newton read a paper at the Institute on the drawings of the bas-reliefs



PATENT ARRANGEMENT OF HEARTHS.

made by Mr. Joseph Bonomi; and Mr. Cockerell, Professor Donaldson, and others, offered many valuable remarks from their personal knowledge of the site. But it was then a question whether these marbles had ever formed a part of the Mausoleum of Mausolus.

At that meeting the council announced a resolution that, "It was with great satisfaction that the acquisition of the marbles had been effected through Her Majesty's Government by the architects of this country in 1841, and expressed the acknowledgment of the members to the Secretary of State, Lord Palmerston, through whom such a valuable addition to our Museum had been made."

In 1856 Mr. Charles Newton was appointed Vice-Consul at Mytilene, and went out with full powers to transmit these remains home. And from the autumn of that year commence his despatches, which are now published accompanied by drawings made by Lieut. Smith of the Royal Engineers.

The care he has taken in the investigation, the assiduity and knowledge he has shown, must be apparent to all who read these documents, and it must be a great satisfaction for him to know that he has set at rest all theories that have been built up of the original form of the Mausoleum. Not only has he discovered the Ionic columns, beautiful cornices, sculptures, and mosaics, but the steps, showing the manner in which that marvellous flight was constructed, and which was conceived to be a myth only equal to the Tower of Babel.

In conclusion Mr. Hansard alluded to Mr. Hawkins's admirable letter of April 26th, 1858, to which we have already referred, giving the early history of these remains, and a catalogue of the sculptures that have been deposited in the British Museum, and to the very beautiful drawing now on the walls of the Royal Academy, by Mr. Cockerell; and a hope was expressed that before long Mr. Charles Newton might give the Institute the result of his more recent investigations on the Mausoleum of Mausolus.

PATENT ARRANGEMENT OF HEARTHS FOR VENTILATION.

OUR readers are acquainted with the mode patented by Mr. George Jennings, of forming flues and air passages in buildings. The accompanying diagrams illustrate another portion of Mr. Jennings's patent.

Instead of using the ordinary wood trimmers at the fronts of fireplaces, cast-iron trimmers are employed, having air passages through them, so that any air admitted between the floor, by air bricks or otherwise, may pass freely through such trimmers; hollow blocks of earthenware being used below the hearths, so that the longitudinal passages through them are made to correspond with the air passages in the trimmers.

The *Engineer* says:—

"From the ends of these blocks proceed similar blocks, which rise up the sides or the backs of the flues or chimneys; suitable junctions, with corresponding hollow passages, being used for connecting the horizontal and upright blocks; and, to insure good joints, the ends of the blocks are formed with grooves to receive tongues. In making flue and air passages combined, the blocks are formed of earthenware, by forcing clay through moulding orifices so constructed that each die will produce in any desired lengths rectangular blocks, the central passage of which is suitable for a flue, which it is preferred should be cylindrical, whilst the four angles are made hollow, and form four angular air passages around the central passage or flue; or in place of each die being formed to produce the rectangular hollow blocks, each die may be made to produce half or a quarter of such a block, in which case the sides where they come together are formed with grooves to receive tongues or cement; and in all cases the ends of such blocks are made with grooves to receive tongues or cement. In order to more conveniently provide for the conveying away rain water from the roofs of buildings, and for ventilating the drains into which rain water descends, hollow blocks are formed, suitable for bonding in with the brickwork of a building, such hollow blocks being of clay expressed through dies or moulding orifices: each such block, in addition to the tubular passages for the rain water, is formed with three sides at right angles, which form suitable projections for bonding in with brickwork."

Fig. 1 shows a plan of a cast-iron trimmer, having suitable flanches and recesses to receive the ends of the joists, and formed with passages through it for the passage of air to and through the hollow hearth-blocks; and Fig. 2 is a front elevation of the trimmer, the form shown being the one preferred, but requiring variations to suit special cases: a, a, is the trimmer, which at its ends are supported by joists b, b, or by walls or otherwise: c, c, are joists, which are supported by the flanges a^1, and are kept upright by recesses or projections at a^2, a^2: a^3, a^3, are air passages; and d, d, are blocks of hollow earthenware, which conduct air from a lower apartment into air flues in the walls above the hearth. Where such hollow blocks are applied, these air blocks are supported at one of their ends on the flange of the trimmer. The joists may, where necessary, be tied to the trimmer by screw bolts and nuts, as shown at e, e. The ordinary hearth is placed over the hollow earthenware air blocks, and the ends of the hollow blocks are connected at one end with air flues in the walls, and with the source from which the impure air is to be withdrawn. When it is desired, one or more of the hollow channels in the hollow earthenware blocks may be arranged to supply air to the fireplace which is above such earthenware blocks. By thus using cast-iron trimmers and hollow earthenware blocks in combination with air flues, great opportunity will be afforded for ventilation, by making openings in the ceilings and cornices in the rooms below, and arranging for the air to pass between the joists, and to and through the channels in the hollow earthenware blocks.

The patentee claims, first, the construction of air flues in combination with cast-iron trimmers and hearth-blocks; secondly, the construction of smoke, in combination with air-flues, by means of hollow earthenware blocks made by expressing clay through moulding orifices, either in one or more pieces; and, thirdly, the construction of earthenware blocks for rain-water pipes and air-flues.

LUNATIC ASYLUMS; AND TREATMENT OF THE INSANE.*

DISTRIBUTION of plan in buildings, and architectural features, go to form the habits and character of the residents or inmates; and in no class of structures is an analogous influence so necessary to be kept in view, in design, as in the case of lunatic asylums. Like many branches of an architect's practice that require particular study, this field claims almost more than belongs to architecture proper, and to building.

General hospitals, prisons, and reformatories; industrial and scholastic institutions of several kinds,—indeed large buildings under many different designations, and with new and special requirements, have been lately erected in all parts of the country, at the demand for social and educational improvement,—one long neglected, and still, in many respects, having to be answered by the provisions in which practical architecture and its professors must exert a chief share of direction and contrivance. Professional architecture thus has become extended very greatly beyond the bounds of the hypothetical *art and science;* and the architect will have to keep himself informed of the most advanced ideas in the medical and the scholastic professions, and many others, in addition to preserving his acquaintance with general science.

It is to be regretted, as to certain recent structures, that the architectural and the other professionally operative agents in the design, have not produced a result satisfactory in the opinion of those who have the best claim to judge. We may hear of lunatic asylums, planned so as to present obstacles to watching and superintendence, or similarly ill-adapted to primary objects; and some of these buildings are even so deficient in the supply of water, as to give rise to a complaint from medical authorities, of the inability of architects to conceive the great extent of the provision required in that particular. These defects being attributed to works which happen to have decorative and æsthetic character—which deserves to be considered in all buildings, and in lunatic asylums certainly—something to the extent of prejudice seems to have revived against art itself as inimical to use. It is desirable that any defects as referred to, should be avoided in future, for which object, in lunatic asylums, as before observed, more than *architectural* knowledge will be needed,—to wit, some study of the treatment of insanity itself. With this treatment the arrangement and construction of asylums have to be so intimately connected,—intimately, even as compared with any curative appliances in ordinary hospitals,—that it is not to be wondered at that the subject has been attentively studied by medical men who have devoted themselves to mental disorders.*

Principles as at present arrived at, being found directly condemnatory of many asylums of old construction which are still in use, and of some later works of new building or enlargement, we shall probably return to this subject,—to trace the progress of the changes made, and to contrast advantages of the several arrangements.

We may observe, that whilst particular study of objects and new requirements in distinct classes of structures, may be set down as of modern date, it is doubtful whether objects can be properly attained in the present system of architects' practice, and especially by competitions. Educational qualifications of a very general and comprehensive character are needed by the architect; but somewhat greater separation than exists between fields of practice might be advantageous to all objects, as the system in other professions is found to be. There is little inducement to make a special study of any class of buildings, so long as

* See page 293, *ante*.

* Reference may be made to Dr. Conolly's papers published some time back in *The Lancet*; also to several articles which have appeared in *The Asylum Journal of Mental Science*.

an architect's reputation goes for nothing, and the successful result of one production constitutes no step in progress for the public, and affords little private advantage. At least, it is deserving of consideration, whether the present practice is not favourable to experiment, rather than to direct progression at the hands of the really competent men, who often hold aloof from competitions. As to the probability of advancement in art and science, the practical pursuit of the departments of the profession that include public buildings would not be open to the counteracting agencies which seem ever to have frustrated improvements in house-building and the appliances for domestic comfort.

Though there be no class of buildings that so much require to be planned for their purpose, —as we have intimated, it unfortunately happens that a large majority of the asylums and hospitals for the insane, referred to as in use, never had any character of special design or fitness. Of the 21,344 lunatics set down in the last report (the eleventh, dated 31st March, 1857) of the Commissioners in Lunacy, as confined in asylums, hospitals, and licensed houses in England and Wales, at the date of the 1st January, 1857,—5,175 were in the private establishments. In the latter case, the buildings, 117 in number, seldom appear to be more than old houses, remodelled in various degrees for their new purpose. Beyond the figures just given, however, a considerable number of lunatics would be found in the wards of workhouses. The general tenor of the recent reports seems to point to a very large amount of work still to be effected, both in the improvement of existing asylums and the provision of new and additional ones. The proportion of pauper lunaties and idiots to population appeared to have increased in the five years ending 1st January, 1857, from 1 in 847 to 1 in 701. Whether this indicated the true prevalence of the disorder, taking all classes of the population, does not seem conclusively settled. The tendency is doubtless to the discovery of cases which might once have passed unobserved. Moreover, it is admitted in the tenth report of the Commissioners, that the present improved treatment in asylums may induce comparative longevity, and therefore an accumulation of chronic cases. Combe, the phrenologist, has argued that a certain large proportion of a people, though not in the condition which would be recognized as lunacy, are so constituted that it is desirable for the public good and the safety of society, that such individuals should be always kept in confinement. Taking, however, the statistics as first presented, the work still to be done is enormous in extent.

Forty-one counties of the fifty-two in England and Wales, as we can gather from the eleventh report, had provided asylums up to the end of 1856; Lancashire having three, and Middlesex and the Ridings of Yorkshire each two in number; joint asylums served for Bedfordshire, Hertfordshire, and Huntingdonshire; for the counties of Denbigh, Anglesey, Carnarvon, Flint, and Merioneth; for those of Monmouth, Hereford, Brecon, and Radnor; for Leicestershire and Rutland; for Oxfordshire and Berkshire; and for the counties of Salop and Montgomery. The other asylums, up to January, 1857, included those of the counties of Bucks, Chester, Cornwall, Derby, Devon, Dorset, Essex (at Brentwood), Gloucester, Hants, Kent, Lincoln, Norfolk, Nottingham, Somerset, Stafford, Suffolk, Surrey (at Springfield, Wandsworth), Warwick, Wilts, and Worcester. There were borough asylums at Birmingham, Bristol, Haverfordwest, and Hull; and other institutions, classed as "hospitals," at Exeter, Colchester, Liverpool, Cheadle (for Manchester), Lincoln, Norwich, Northampton, Oxford, Stafford, Reigate, York (two), and London; St. Luke's Hospital, Guy's Hospital, and Bethlehem Hospital being those of the metropolis. There were *refused admission* for want of room, in 1856, at the asylum for Beds, Herts, and Hunts, 33 cases; at the Dorset asylum, 2 cases; at the three Lancashire county asylums, in all, 113 cases; at the two Middlesex asylums (Hanwell and Colney Hatch), 618 cases; at the asylum for Nottinghamshire, 11 cases; at the Surrey asylum, 50 cases (females); and at the asylum for the West Riding of York (at Wakefield), 95 cases. The state of the metropolitan county still claims serious attention; though, as in the case of some other counties, and as alluded to in our last article, means have been recently taken to extend the provision by the enlargement of existing buildings. Amongst the counties not in the enumeration which we have made from the report of 1857, there may be mentioned as having asylums about being commenced or completed, Cambridgeshire, in conjunction with the Isle of Ely and borough of Cambridge; Durham county, also to provide for Newcastle-upon-Tyne; Carmarthen with Cardigan, and Pembroke; the county of Sussex (at Hayward's Heath); Cumberland with Westmoreland (a plan and elevations of the building were given with our last); and some others might perhaps be added.

Still, both the amount of actual provision and the nature of the provision should form a subject of present moment and deep national concern. Many boroughs have evaded their duties, and committed their lunatic poor to private asylums, which, though obliged to be licensed, seem to be beyond the power of full control. In some cases lunatics are at distances of many miles (amounting even to a hundred, or more) from their friends and relatives; and the parsimony of certain boards of guardians seems to have afforded a show of excuse for the worst neglect. The lunatic wards in workhouses are represented often as in a sad condition; and patients are frequently retained in these, who, whether from being curable or dangerous, should be placed in asylums, as directed by the Lunatic Asylums Act of 1853. Many of the features of the horrible condition of the insane in former days, indeed, appear to be repeated at this very time. Rooms very offensive; want of water, of conveniences of every description, and of the services of trained nurses and attendants; restraint, where it may be unnecessary as injurious; or the idea of it given by gloomy apartments; defective ventilation, and inconsiderate neglect amounting to cruelty, are shown, by the reports, to be yet possible, and to exist in the workhouses and the other institutions, in spite of remonstrance after remonstrance.

The London asylums are considered to be radically defective, both in their arrangement and from the localities in which they are placed, and as offering great impediments to the exertions of the medical officers. The abandonment of St. Luke's Hospital, and the disuse of the insane wards at Guy's Hospital, have been recommended and dwelt upon by the Commissioners; and whilst the improvements in Bethlehem Hospital are recognized, the defective condition of the criminal wards is remarked upon as the result of grave defects in the building itself; the wards occupied by the female patients are adverted to as of "imperfect construction," and those of the males are called "radically bad, and quite unable to afford even tolerable accommodation to the patients."

In this view, great importance is attached to the effects of exercise in the open air, but it is curious that we find the chief requirements above alluded to, and the defects of the then recently erected London buildings, and of other means for the treatment of the insane, adverted to as far back as in the years 1814 and 1817, in articles in the *Edinburgh Review*, the last of which appeared after the great exposure of the condition of the insane in the Parliamentary Reports of the two preceding years.

On the other hand, as to St. Luke's Hospital, it is right to state, that at the annual meeting of the governors in February last, it was shown that the number of cures during the previous year had amounted to no less than 63 per cent. of the number of patients. The wing-wards on the male side then remained unaltered, and presented a very unhappy contrast to those on the opposite side. The medical directors remarked (showing, were it necessary, the operation of those influences which we adverted to at the outset), that since the alteration of the wing-wards on the female side, the patients were not only more tidy and well-behaved, but seclusion was hardly ever called for; accidents, formerly frequent, had ceased to occur; the patients could be kept under constant observation; and the good results would be apparent from the statement that, of the unfortunate creatures confided to the institution during the year, one-half before their admission had either meditated or attempted suicide, yet that, under the new system, not one accident had occurred.

The thirty-seven county and borough asylums which, at the beginning of last year, comprised the whole public provision for the lunatic poor of England and Wales, had space for little over 1,300 additional inmates, whilst during the previous year, nearly 1,000 patients had been unable to find admittance to asylums, for want of room. Space had to be found in licensed houses for nearly 2,000 paupers, for whom there was no room in county asylums and hospitals; whilst other lunatics and idiots in workhouses, or with their friends, amounted on the 1st January, 1857, to no less than 12,297. Thus no temporary expedients would satisfy a want steadily increasing. The condition of the workhouses is an element of the question pressing for speedy solution. Many of these places are becoming lunatic asylums, only without the attendance and appliances which are necessary, and which form the safeguard of patients elsewhere.

THE DRAINAGE QUESTION AT THE SOCIETY OF ARTS.

ON Friday the 14th, Mr. T. Baker read a paper at the Society of Arts, "On the Plan suggested by the Government Commissioners for disposing of the Metropolitan Sewage;" Lord Ebury, in the chair. Mr. Baker introduced his subject by pointing out that the rapid ravages of cholera, in the various epidemic seasons which have prevailed in this country since 1832, have rendered more palpable to the eye of the inexperienced, that which the silent devastations of typhus had long before made clear to the enlightened physician, viz.—that very much of the disease under which the population suffer, especially among the classes at the base of the social scale, is not only preventible, but easily preventible, by the most simple means,—expressed in that important word,—CLEANLINESS. He thought it would be preposterous to imagine that in Britain, the birthplace of the steam-engine, the railroad, the *Leviathan*, and the electric telegraph, —there can be any real practical engineering difficulty, in this latter half of the nineteenth century, in thoroughly draining even the metropolis of the world, or in carrying the refuse to any distance where it may be safely disposed of. Yet we are still hammering at the plan! He then described the existing sewerage, and the intercepting main scheme, now so long before the public, with which the name of Mr. Frank Forster has usually been connected, as the proposer, and which was based upon the labours of Mr. Roe, and other engineers, previously in the service of the Commissioners of Sewers, further modified by Messrs. Haywood and Bazalgette.

"Soon after the passing of the Metropolis Local Management Act, in 1855, the general plan of interception was revived by Mr. Bazalgette, and adopted by the Metropolitan Board of Works; but, after revision by Captain Burstall (who advised the river at Erith as the outfall, in lieu of Barking Creek), was finally rejected by her Majesty's First Commissioner of Public Works, who referred the plan to Capt. Galton and Messrs. Simpson and Blackwell, with special reference to the proposed outfall at Erith.

These gentlemen have reported against the outfall adopted by the Board, and recommended the construction of channels on both sides of the river, together about forty-seven miles in length, chiefly open, but partly covered, for the purpose of carrying the sewage to Sea Reach, near the mouth of the Thames.

The estimated cost of the intercepting sewers recommended by this plan is upwards of two millions and a quarter, and of the continuing channels to Sea Reach, upwards of three millions and a half, together about six millions, from which no return whatever is to be looked for.

This plan of the referees, on being submitted to the Metropolitan Board of Works, was itself referred by that body to two other engineers, who have just reported that in their opinion the proposed works would cost full eleven millions, and suggested other modifications in the scheme of Mr. Bazalgette." He then proceeded to speak of the utilisation of the sewage, and read the Conclusions arrived at by the Government commissioners, and which we laid before our readers at p. 329, *ante*.

"With regard to the purification of the River Thames," Mr. Baker continued, "independently of the continued discharge of sewage into the stream, a valuable report, by Mr. Goldsworthy Gurney, was printed, by order of the House of Commons, in December last. In this report it was shown that the solid matters of sewage, being considerably heavier than water, sink at the rate of about a foot per minute in still water or slow currents—and that they will also precipitate in stronger currents, even up to the rate of 170 feet per minute; but, when the current runs above this rate, the sewage is kept in a state of mechanical admixture with the water. Consequently, sewage will deposit at all times of the tide along the banks, where the current is always sufficiently slack; although, in the middle of the stream, while the tide is running full, such portions as have not already sunk will continue suspended in a mixed state. When the tide is

not running it sinks in all parts. It follows that immense deposits of sewage and foul matter are retained in the mud-banks along shore—the accumulations of centuries,—and that these deposits can never be removed by the tidal influence. Eddies along shore, produced by the opposition of the freshet, down the river to the flow of the tide, and running upwards at the ebb, would prevent this, even were the foul matter in a state of admixture with the water."

"The tide," says Mr. Gurney, "off the terrace at the Houses of Parliament, runs at an average rate of from three to four miles per hour in the middle of the stream: towards the sides its rate is considerably less: within eight yards of the shore it never runs at a rate exceeding 78 feet per minute: nearer to the shore it generally falls into a slack: at from two to four yards off the shore, the tide is either still or takes an opposite direction: when the stream runs up, the eddies run down: when the stream runs down, the eddies run up; as is the case in all tidal rivers. Between these currents the natural water brattice is formed, with a series of recesses, or little cesspools running along shore." Mr. Gurney explains that the water brattice is the still line which divides two retrograde or opposite parellel currents. "Within these brattices a large quantity of sewage is always precipitated and permanently retained. On looking along the river, two black lines may generally be seen stretching along the sides: these black lines are the series of cesspools just adverted to, filled with sewage."

As a natural consequence, it was found, by careful experiment, that the water at the sides was at all times more than five times as foul as that taken from the middle of the stream.

Again, Mr. Gurney says, "in the river, at high water, about the turn of tide, there is a notable period in which the water is still, or nearly so, for about ten or twenty minutes. The sewage will then fall about the rate of a foot per minute, and if it continues for ten or twenty minutes, the sewage will fall as many feet: at this depth it will reach the bottom in many places. After the tide has turned, and the slow current commenced, the sewage will still continue to sink in the slack, retrogrades, and eddies along shore, where it will remain until the turn of tide. A large portion on the flow will be stirred up and carried back again by the upcast."

He proceeds to point out that the quantity of foul deposit retained in the Thames is nearly constant, being governed by the size of the slack and retrograde currents; that the sewage, if discharged into the river at all, no matter how far down, would be brought back by the upcast; and that if the retrograde currents be not destroyed, it will be retained in the stream in large quantities. But if the retrogrades are destroyed, the sewage will not be so retained, as in all tidal rivers where there is no room at the sides for slacks or retrogrades to form there is no deposit; and he recommends—

"That all the retrogrades and brattice cesspools be destroyed.

That all obstructions to a uniform flow of the river, at low water, be removed.

That the projections along shore be rounded off, and the hollows filled up.

That the serrated edges of the river at low water be made plain, and continued along the whole line of low water-mark.

That the width of the whole water-way, when the tide is at its lowest ebb, be not more than 140 yards from side to side; so that the river may run, not only in a uniform current, but at a rate of not less than 225 feet per minute."

Arriving at the plan of the Government Commissioners, an outline of which we have given, the reader expressed his opinion strongly in favour of it, and urged that it should have the immediate attention of scientific and philanthropic men.

A discussion of some length followed. The chairman defended the delay of the Metropolitan Board of Works, and approved of the plan of the Government commissioners. The disadvantage, he said, which principally struck him was this: they had in this scheme to deal with the difficult subject of the sewers themselves, which it was proposed to place within this embankment, and it was not stated whether the three and a-half millions estimated cost included these sewage works. There could be no doubt that a very large amount of valuable fertilising material could be precipitated by chemical means, and that as far as that went the problem was solved. If they could get the sludge separated from the water, the latter might be safely discharged into the river without being productive of any evil at all; for, even in the present day, it had not been proved that the discharge of sewage into the river had had any seriously bad effect upon the health of persons living in houses where proper attention was paid to ventilation. It was only the very poorest classes, dwelling in wretched and ill-ventilated tenements, who suffered from the malaria generated from the deleterious substances discharged into the river. The great difficulty was, how to deal with the sludge. It was exceedingly necessary for those to whom the carrying out of this measure would be entrusted, to consider what would be the effect upon the river itself of confining it within new and narrower banks. Serious evils had resulted at Chester, a city with which he had formerly been closely connected. The embankment of the river there was undertaken, and most favourable effects had been expected from it, but the result had been that the mouth of the river had silted up to such an extent that now they were not able to get ships up to Chester except at very high tides. If the flow of the tide was impeded and a smaller amount of water was carried up the channel, the scour would be diminished to an equal extent.

Mr. Lawrence Palk, M.P. also approved the report which had been so much alluded to that evening. He did not mean to say that with regard to some of the conclusions there might not be doubt, but upon the whole he thought it had put the question of getting rid of the sewage of towns upon a more practical footing than it had ever been on before. The principle which predominated in that report was that of getting rid of the liquid sewage of towns by a system of irrigation of meadows, as practised with great success in the neighbourhood of Edinburgh; but there, as they would perceive by the report, complaint was made that a nuisance occasionally arose from the deposit of the sewage in the open ditches. The system of irrigation was by no means new in Devonshire, and, in fact, was almost peculiar to that county. They had had for many years a system of irrigating the meadows there by the springs that rose from the sides of the hills, the result of which, as regarded the crops, had been found to be extremely beneficial. The hon. gentleman proceeded to read a letter which he had received from Mr. Campbell, of Rugby, detailing the results of some experiments he had made in irrigating with sewage water. Judging from the conclusions arrived at by the writer of that letter, it would seem that the irrigation of land with sewage might be carried on with profit to the town, and with great benefit to the agricultural districts. The other leading feature of the report of the Royal Commissioners was the chemical deodorisation of the sewage by the means with which they were already acquainted. Being very anxious to test that plan by actual experience, he went to Leicester and witnessed the entire process under Mr. Wickstead's system, and he could speak with the greatest confidence of its perfect success. He saw the process through all its stages, and he did not notice any particularly offensive smell; indeed, the smell was not of a character to satisfy the critical senses of the agriculturalists of the district in that respect.

Mr. Haywood was not quite so well satisfied with the report. He said the commission was appointed in January, 1857; and, after sitting for twelve or fifteen months, it had arrived at nine certainly very satisfactory conclusions, and these conclusions had, doubtless, acquired considerable additional importance from having received the assent of that commission; but every one of them had been arrived at before by practical men who had carefully considered the question. There was not a single point of novelty in any one of these nine conclusions. The most important of them, perhaps, was the fourth, in which the commissioners admitted that, after examining nearly all the places in the country where irrigation by sewage water was practised, their opinion was that, excepting under very favourable circumstances, it would not pay. That was a most important point. There was no novelty in it, but it would derive greater force by being promulgated through the authority of this blue-book. The next conclusion was also an important one, as bearing upon the subsequent scheme, viz., that works for precipitating sewage matter might be erected in the vicinity of towns without inconvenience to the inhabitants: with that he quite agreed. The tenth conclusion required some explanation, as at present it was put in a very doubtful shape. With regard to the scheme itself, it was necessary that they should have it really before them before they could discuss it, but the report merely gave an outline—an idea of a scheme. It told them, in the first place, that sewage might be dealt with without fear of harm to the inhabitants of the city, and, secondly, that if the Thames embankment were carried out, the sewage works could be made upon that embankment. That, in fact, comprised the whole of the scheme now propounded, and, as such, he was quite unable to discuss it. There was an entire absence of all detail by which the probable cost might be estimated.

Dr. Barnes repeated his statement,—that the Thames population was remarkably healthy. Fever and diarrhœa were less prevalent amongst those living near the river than amongst those at a distance from it. He must also insist that the principle of concentrating sewage in gigantic drains was radically wrong. The right principle was the very opposite one—to sub-divide the sewage as much as possible. Mr. Haywood had shown the insurmountable difficulties in ventilating the sewers even in their present comparative simplicity, and surely this difficulty would be enormously increased by collecting the sewage into main-drains. We should be subject to the reflux of sewage gases into our houses with tenfold greater virulence. Mr. Goldsworthy Gurney's report had been much referred to, but he (Dr. Barnes) felt bound to point out that it displayed such misapprehension of some of the first principles of chemistry, that it ought to be read with caution. His opinion that sewage gases were propagated solely by virtue of the law of the diffusion of gases, was directly at variance with observation. The sewage gases escaped into the streets and houses under the immediate action of currents, the force of which was demonstrable by the anemometer. In referring to the scheme of the Royal Commissioners, Dr. Barnes said it had been truly pointed out by Mr. Haywood that no complete plan had been presented by them. He was at first much disposed to agree with that report, but the difficulties urged by Lord Ebury and Mr. Haywood now satisfied him that this report only added another argument to those he had been urging for some time past, in favour of a full and open inquiry into the whole subject, including the fundamental principles, which had been overlooked altogether.

Mr. Holland felt with Mr. Haywood, that the plan of the Royal Commissioners was a mere sketch, and therefore we were not in a condition to do more than discuss the idea which had been propounded. Mr. Haywood had omitted to notice one very important feature in the question. The report of the Royal Commissioners started with the assumption, that the embankment of the Thames was a good thing *per se*, without any reference to the sewage question at all. If they assumed that this ought to be carried out on its own account, and was worth its cost, then Mr. Haywood's argument about that part of the cost did not hold good. He had no doubt the embankment would be a matter of enormous expense, and he was sceptical as to whether the benefits resulting from it would be equal to the cost it would involve; but assuming this to be the case, then he thought no one could doubt that, so far as the disposal of the sewage went, this plan, if effectual, would be the cheapest that could be adopted. With regard to the question of disposing of the sewage profitably, there were various opinions upon that. He took it for granted that the sewage of London was too valuable to be thrown away; but, at the same time, he thought the expense of conducting it to where it could be brought to profitable use would be very great, and it would be difficult to persuade the public that it was worth while to incur such an expense under the idea of eventual profit. The rendering of the sewage inoffensive was an easy thing enough, and was carried out perfectly at Leicester. He did not, however, agree with Mr. Palk, that the process was entirely free from all offensive smell.

Mr. Frederick Doulton thought good would result from the report, although upon the question of the disposal of the sewage the Royal Commissioners had scarcely gone further than to condemn the proceedings of former commissioners of sewers and boards of works as radically wrong. In his opinion further inquiry was necessary, not only as to the necessity of diverting the sewage from the Thames, but also upon the question of the large intercepting sewers proposed. They had a very striking illustration of what might be looked for in the carrying out of the larger scheme in the Victoria-street sewer, which was to cost 4,000*l.* or 5,000*l.* but which had reached, he believed, 200,000*l.*

Mr. Pittard, as the medical officer of the London Docks, said, the water in these docks having become extremely offensive in hot weather, he sought means to effect a remedy, and with that view he paid a visit to the Tottenham Sewage

Works, and witnessed the process of deodorisation carried on there. The water that was discharged had the appearance of great purity, but having had the curiosity to preserve a little of it, he found after a few days its odour became intolerable, which, he thought, proved that the impurities, although temporarily suppressed, had not been really removed. Mr. Pittard made some remarks upon the present polluted state of the Thames, which was perceptible to all who made the passage of the river; and the odour being similar to that emitted from the gully-holes of the sewers, he thought there could be no doubt as to its deleterious influence on the health of the population.

Mr. Robert Rawlinson informed the meeting that, although the report of the Royal Commissioners had been termed an outline or sketch of a plan, this was no proof that a plan had not been matured previously to this outline having been published. He might state that the estimates in the report were not matters of guess. The details had been duly worked out, and might, he believed, be fully relied on.

THE DEAD AMONGST US.

FROM time to time the evils of intramural interment are still painfully brought under the notice of the public; and it is seen that, although this suicidal practice has in great measure been stopped, much care is still required to prevent the danger which is incurred by disturbing the immense masses of dead bodies which crowd the graveyards and vaults of numerous churches and chapels in the metropolis and large provincial towns. Attention was recently drawn to this important subject by the circumstance that in Jamaica-row, Bermondsey, the condition of the burial vault below Bethesda Chapel had become so dangerous that the medical officer very properly brought the matter before the magistrate. On this occasion it appeared in evidence, as previously mentioned, that the vault was occupied by almost as many dead bodies as there were sitting spaces above, and that a poisonous effluvium endangered the health of the neighbourhood. Some discussion took place respecting the best means of finding a remedy for the evil, and it was suggested that the vault should be filled with layers of peat charcoal and concrete, and thus substantially bury the dead and prevent danger to the living. Some objection was made to this, when it was shown that the superstructure was in such a dangerous condition that it had been condemned by the police surveyor, and an order was given for its demolition within a fortnight. When this is done we shall be glad to hear that the remains of those who rest in this vault have been properly cared for, for the trustees of this building should remember that a large sum of money has been given for the privilege of burial: this sum has been paid in trust that the dead would be permitted to rest. Years since we directed attention to the evils of burials in the vaults of churches, and think that those who have made it a matter of profit since the warning should be accountable for any danger that may arise in consequence.

Having watched the management of many of the London grave-yards and vaults since the enactment for their closing has been brought into effect, we believe that further power is required in order to provide for the safety of the living and the respect and decency due to the dead. Independently, however, of any new enactment, much might be done if those who attend the churches and chapels of the metropolis with their families made inquiries respecting the condition of the vaults below their places of worship, and insisted that proper sanitary measures should be taken. Thousands who attend our churches do not think of the large mass of poison which is placed beneath and pollute the air they breathe. Some years ago we brought this matter prominently before our readers, and a view we gave of the vaults of Bow Church had a strong effect on the public for,—"nine days." While writing this a report by Dr. Letheby on the state of the vaults of the City churches has come to hand. The officer of health has examined the public vaults below the church of St. Botolph, Bishopsgate-street, and reports that they should be publicly closed, and says that the result of an inspection up to the present time shows that in the vaults of twenty-five of the City churches there are not less than 5,700 dead bodies,—upwards of 200 in each! Some of these receptacles are, however, much more crowded than others.

Dr. Letheby remarks,—"If the same proposition holds in respect of all the City churches, there are about 16,000 corpses beneath the pews occupied by Sunday congregations." We have frequently remarked that the gases which are generated by the decomposition of human bodies connot be confined in the thickest of leaden coffins, and that the longer the gas is pent up, the more dangerous is the poison. Dr. Letheby confirms this opinion and says,—"In some cases the effluvium from the vaults is most offensive; for, although it is the general practice to confine the body in a lead coffin, yet the metal gives way after a longer or shorter time * and then oozes out a dark treacle-like liquid, which smells abominably and which is, I believe, a most deadly poison. I have seen this escaping from a lead coffin that had been deposited in the vaults for more than one hundred years, so there is no saying how long a time the mischief of decay and slow corruption may be carried on. Again, the way in which the coffins are piled upon each other leads to the crushing in of the lowermost of the series when the wood decays, and then the putrid matter is squashed out through the fissures of the broken coffins. In many cases, the vaults are entered by imperfectly closed traps or doors from the general area of the church, and the vaults are either not ventilated at all or they are ventilated into the public way, so that there streams out a quantity of poisonous vapour that may be the cause of much mischief." The remedy proposed for this mischief is to divert the gases from the vaults into a proper channel; and by conveying them through a shaft to a high level they may be safely disposed of: this has been done in the case of the Roman Catholic chapel at Moorfields. A better mode of disposing of the remains is to arrange the coffins on the floor of the vault and cover them with dry lime or fresh earth, as has been done in the vaults of All Hallows, London-wall.

It is to be hoped that clergymen, churchwardens, and others, who are responsible for the health of those who visit the buildings entrusted to their care, will use the best means of stopping the danger which still exists: in fact, when we find that in the City of London alone, which is but a scrap of the whole of the metropolis, there are about 16,000 corpses poisoning the air by their decomposition, and think of the additional thousands of dead bodies which lie in St. John's and St. James's, Clerkenwell; St. Clement Danes and the other churches in the Strand, and many other places which might be mentioned; it is evident that a most vigilant supervision of the burial vaults of London and the provisional towns is required.

DESIGN FOR A FOUNTAIN, WITH THE STORY OF SABRINA.

WE depart to some extent from our usual practice to engrave the annexed design, as it appears to us to be a clever attempt to illustrate our national history, more than is the case with public monuments generally, a point but too often lost sight of by our architects. In the present instance, Mr. W. Burges, who has already appeared before the public as a successful competitor in the affairs of *Lille* and *Constantinople*, has undertaken to illustrate the story of Sabrina, a story well known to general readers by the beautiful allusion made to it by Milton in his "Comus."

Geoffry of Monmouth thus relates the course of events in his very veracious Chronicle, book ii. ch. i. p. 109, of Bohn's edition:—

"Brutus had, by his wife Igogne, three famous sons, whose names were Locrin, Albanact, and Kamber. . . . After they had a long time reigned in peace together, Humber, king of the Huns, arrived in Albania, and having killed Albanact in battle, forced his people to fly to Locrin for protection. Locrin, at hearing this news, joined his brother Kamber, and went with the whole strength of the kingdom to meet the king of the Huns, near the river now called Humber, where he gave him battle, and put him to the rout. Humber made towards the river in his flight, and was drowned, and on account of which it still bears his name. Locrin, after the victory, bestowed the plunder of the enemy upon his own men, reserving for himself the gold and silver which he found in the ships, together with three virgins of admirable beauty, whereof one was the daughter of a king in Germany, whom, with the other two, Humber had forcibly brought away with him, after he had ruined their country. Her name was Estrildis, and her beauty was such as hardly to be matched. Locrin, smitten with love, would gladly have married her, at which Corinæus was extremely incensed, on account of the engagement Locrin had entered into with him to marry his daughter. He went therefore to the king, and wielding a battle-axe in his right hand, vented his rage against him in these words—'Do you thus reward me, Locrin, for the many wounds which I have suffered under your father's command, that you must slight my daughter and debase yourself to marry a barbarian: while there is strength in this right hand, that has been destructive to so many giants upon the Tyrrhenian coasts, I will never put up with this affront;' and repeating these words again and again with a loud voice, he shook his battle-axe as if he was going to strike him, till the friends of both interposed; and after they had appeased Corinæus, obliged Locrin to perform his engagement.

Locrin therefore married Corinæus's daughter named Guendolœna, yet still retained his love for Estrildis, for whom he made apartments under ground, in which he entertained her, and caused her to be honourably attended. In this manner he concealed her, and made frequent visits to her for seven years together, without the privity of any but his most intimate domestics, and all under a pretence of performing some secret sacrifices to his gods. Estrildis became with child, and was delivered of a most beautiful daughter, whom she called Sabre. But in process of time, when Corinæus was dead, Locrin divorced Guendolœna, and advanced Estrildis to be queen. Guendolœna, provoked beyond measure at this, retired into Cornwall, where she assembled together all the forces of that kingdom, and began to raise disturbances against Locrin. At last, both armies joined battle near the river Sture, where Locrin was killed by the shot of an arrow. After his death, Guendolœna took upon her the government of the whole kingdom, retaining her father's furious spirit, for she commanded Estrildis and her daughter Sabre to be thrown into the river now called the Severn, and published an edict through all Britain that the river should bear the damsel's name, hoping by that to perpetuate her memory, and by that the infamy of her husband, so that to this day the river is called in the British tongue Sabren, which by corruption of the name is in another language Sabrina."

Thus far Geoffry. Mr. Burges has endeavoured to work out the story by representing the early part of the history in the groups under the lower basin. Those shown in the cut represent Estrildis brought captive to Locrin — the marriage of Locrin and Guendolœna — and Locrin visiting Estrildis and Sabrina in the underground apartment. At the extreme top we see Guendolœna ordering Estrildis and Sabrina to be thrown into the water; while quite at the bottom are bas-reliefs of the Undines, or water-spirits, who rejoice over the prey that awaits them. The tributary streams are placed in the capital, immediately under the top group.

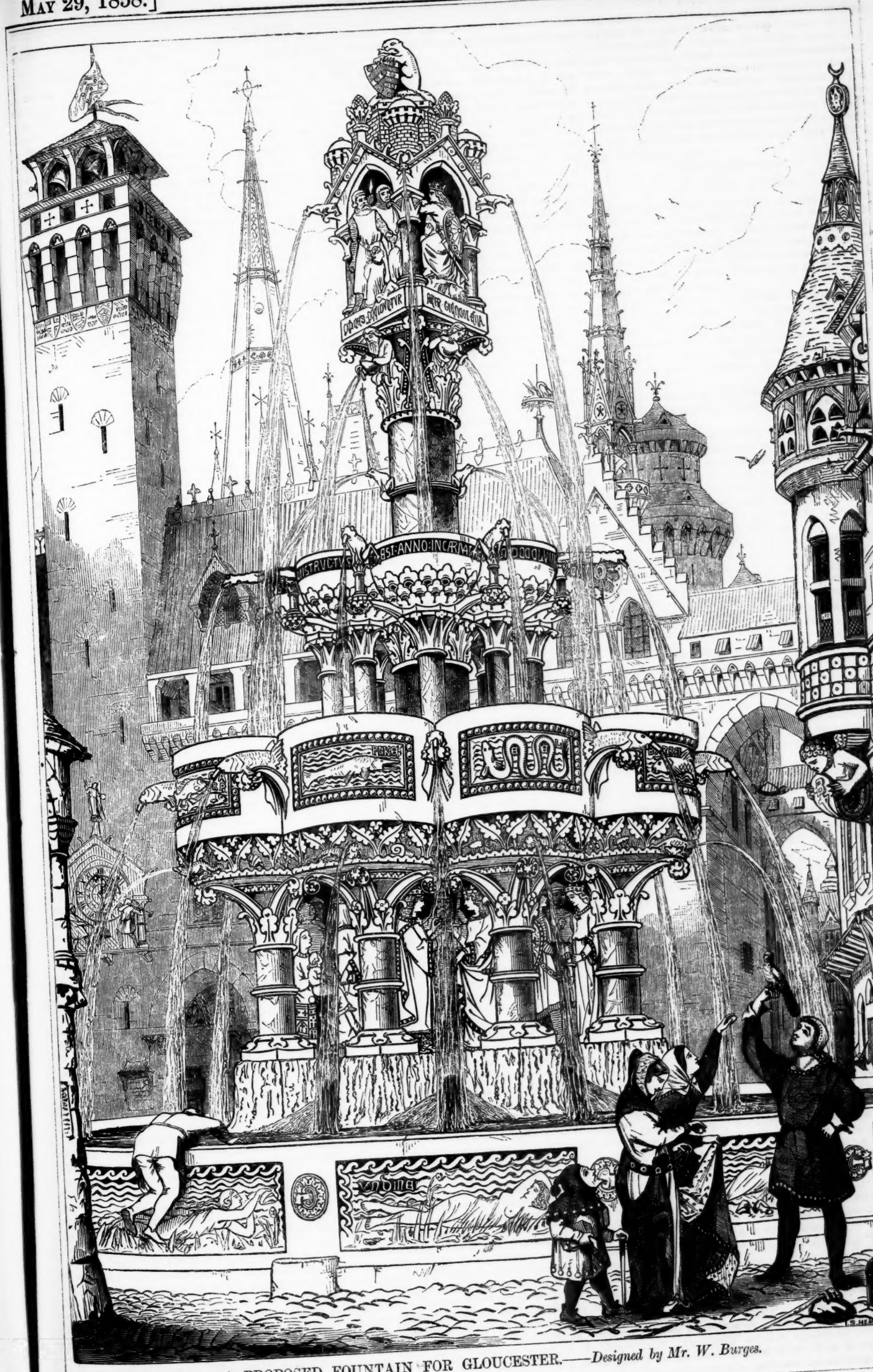
So much for the history. We now proceed to notice the animals, fish, and insects abounding or supposed to abound on the banks of the stream. Uppermost of all is the otter holding a shield emblazoned with the arms of Gloucester; below are the frogs, firstly in their natural position and secondly developed as gurgoyles. Then come the fish; and lastly, intermingled with the foliage running round the lower basin, the lizards, the insects, and the shells. The lizards are made use of as a means of procuring extra jets of water.

The background shows an imaginary view of ancient Gloucester at the beginning of the thirteenth century. On the right is an armourer's shop, on the left the pillory; behind is the town-hall with a lofty belfry tower. An arched opening gives us a view of the town, while at the crown of the arch is hung a sabre taken from some Saracen by one of the Earls of Gloucester during a crusade.

Of course the background is unattainable at the present day, but there is no reason why the good citizens of Gloucester should not add a beautiful and useful adjunct to their famed cathedral by executing the conception of Mr. Burges in stone or marble.

* If the lead coffins were thoroughly air tight decomposition would not take place, and of course if the atmospheric air is admitted other gases will escape.

PLATE-GLASS.—The prospectus has been issued of the "Imperial Plate Glass Company." It is proposed to be constituted by the union under one management of all the plate-glass companies in Great Britain. The capital is fixed at a 1,000,000*l.* in shares of 10*l.* each, and debentures. The persons interested in the six existing works subscribe for 380,000*l.* in shares. It is said that the cost of production will be materially lessened under the new arrangements.



A PROPOSED FOUNTAIN FOR GLOUCESTER.—*Designed by Mr. W. Burges.*

CONSTRUCTION OF THE SOUTHAMPTON DOCKS.

INSTITUTION OF CIVIL ENGINEERS.

AT the meeting held May 18, Mr. Joseph Locke, M.P., president, in the chair, the first paper read was "On the Construction of the Southampton Docks," by Mr. Alfred Giles.

The author stated that these docks were designed by the late Mr. Francis Giles. The works were commenced in the autumn of 1838, by building a quay wall from the shore towards low water, and by driving piles for a coffer-dam, for the enclosure of the dock. These works were stopped during a financial difficulty, after an expenditure of about 7,000*l.* They were resumed in 1840, but an alteration was made in the mode of procedure, in order to obtain a quay berth for the vessels then building for the Royal Mail Steam Packet Company. It was, therefore, proposed to build the quay walls in short lengths upon piles, and afterwards to dredge the dock to the requisite depth. Subsequently, owing to an increase in the size of the vessels, and to a delay in their completion, it was considered desirable to enclose the whole area, so that the dock might be excavated to one uniform depth, and the foundations of the walls be carried to the bottom. For this purpose, an embankment was thrown up by tide-work, enclosing about 20 acres, the soil excavated from the enclosure being used to form the embankment. Some difficulty was experienced at the point of junction of the embankments with the coffer-dams, which were 2,170 feet in length. In November of the same year, during the occurrence of a violent gale, a breach was made in the bank itself; but this it was not thought necessary to repair, as the enclosure was nearly complete, and indeed was perfected in the following March. The excavation of the dock was then proceeded with, and the quantity of soil so removed amounted to 1,150,000 cubic yards, the contract price for which was fourteen pence per yard. During the progress of the excavation, the foundations and masonry of the walls were carried on, as rapidly as possible; but the walls had not been advanced to their full height, when several heavy slips of earth caused some portions to move forward. The piles were consequently strengthened, but as the walls still moved forward, additional engineering advice was obtained, and a plan for land-tying the walls was suggested and carried out. The plan consisted in drilling holes through the walls, as low as the tide would allow, inserting strong bars therein, and tying them back to heavy buttresses of piles, driven at a distance of 100 feet from the wall. After an expenditure of about 10,000*l.* this plan proved a failure, when further mischief was prevented by the removal of the soil from the back of the walls. The walls were strong enough in themselves, but the evil lay in the foundations. One wall, in a length of 600 feet, was found to have moved forward 3 feet; whilst another, only 650 feet in length, had two distinct bulges of 2 feet 3 inches and 2 feet 6 inches beyond the straight line. These walls were 38 feet in height from the coping to the foundations: they were built on a timber platform 6 inches in thickness, the front of which rested on piles driven to the batter of the wall, while the back rested on longitudinal sleepers laid on the soil. Up to low-water mark, they were built with brickwork and concrete bays, and above of rubble masonry, faced with granite ashlar, and having a granite coping. The cost of the wall was 40*l.* per lineal yard. This dock, having an area of 16 acres, with quays, 3,300 feet in length, an entrance 150 feet in width, and a depth of 18 feet below the average of low water of spring tides, was opened in June, 1842.

Owing to the method of founding the walls, an unequal settlement took place, which produced a longitudinal crack. The pressure of the back water against the dislocated face, assisted by the outward thrust of the shears, which were set on the edge of the quays, and by a severe frost operating upon the water in the crack, caused a length of 124 feet to separate: the shears fell, and were destroyed with the wall, and an additional length of 120 feet was so damaged, that it was necessary to re-build it. The square counterforts were torn asunder at the line of the back of the wall, so that the author subsequently adopted a different form, being a square joined to the back of the wall by its diagonal, which he conceived to be the most suited to resist the strains to which it was liable. The fall of the wall occurred in January, 1854, and its re-building cost 11,500*l.*, and occupied twelve months. The coffer-dam used in the reconstruction had to sustain a pressure of 33 feet of water. It was made of two rows of piles, 6 feet 6 inches apart, without any gauge piles. The cost was 20*l.* per lineal foot.

In 1846, the first graving dock was constructed of stone, at a cost of 49,800*l.* The length of the floor was 282 feet, the breadth of the gates 66 feet, and the depth over the sill at high-water spring tides 18 feet. It was lengthened to 343 feet in 1852, at an additional cost of 1,800*l.*

In 1847, the second graving-dock was executed, at a cost of 19,290*l.* The length of the floor was 250 feet, the breadth of the gates 51 feet, and the depth over the sill at high-water spring tides 14 feet. This dock was built of brick and concrete, having only the nosings of the alters, and the key of the invert, of stone. It was particularly free from leakage, and the cost was small.

In 1851, it was determined to complete the excavation of the area, which had been partially cleared in 1840, and to build walls on two sides. This work was executed in the summer of that year, at a cost of 18,000*l.* The area of the dock was 10 acres, its depth of water was 25 feet, the length of the walls was 1,800 feet, and the entrance of the lock was 46 feet in width. The quay walls were made of concrete, with a rubble-face, built of Purbeck stone, tied to the concrete by transverse layers of iron-hoop bond. The concrete was made of blue lias lime and gravel, in proportions of 1 to 8; the gravel being obtained from the excavations. The cost of the walls, 35 feet in height, from the coping to the foundations, was 19*l.* 10*s.* per lineal yard. These walls had answered exceedingly well: their great bulk afforded security against backward pressure, and the width of the base tended to prevent unequal settlement; and for economy they would bear favourable comparison with any other walls. There was only one pair of gates to this dock, as the neck of the entrance was too short to admit of a lock of adequate length for ordinary screw steamers. As high water remained nearly stationary at Southampton for from two to four hours, the gates were allowed to remain open for the ingress and egress of vessels, for at least three hours out of every twelve hours. The lock gates were made of oak posts, with fir bars and planking, and from being framed during the summer, they became so light as to require loading when hung. The bridge across the entrance was framed in two leaves running on wheels, the overhanging parts of each leaf being balanced by the length on the wheels. It was opened by each leaf being run backwards, under a vertebrated and self-supporting platform, which was raised by the bridge itself. It was used for carriages and railway trucks, and had raised footways on each side.

In 1853, the increasing size of the ocean steamers induced the directors to authorize the construction of a graving dock, having a length of floor of 425 feet, gates 80 feet in width, and a depth of 25 feet over the sill. This work was completed in December, 1854, at a cost of 53,000*l.* inclusive of the coffer-dam necessary for making the entrance. The foundations were laid on concrete, 4 feet 6 inches in thickness, upon which was built a base of brickwork and tiles in cement to receive the brick invert, having simply a stone key, and stone nosings and seats for the alters. This large dock could be emptied in less than three hours; and, in cases of emergency, docking and undocking had been repeated twice in twenty-four hours. The gates were constructed of wrought-iron beams, with oak heel and mitre posts. They were worked by ordinary winches, and could be opened in six minutes by four men on each side. For graving dock purposes, where leakage was objectionable, the author thought gates entirely of wood were preferable, as iron being acted upon by change of temperature, the gates were liable to become leaky at the mitre posts.

When the first dock was opened in 1842, the tonnage of vessels entering and leaving the port of Southampton was 276,000, whilst in 1857 it was 657,000. The appliances now existing consisted, first, of an open dock, which all ordinary vessels could enter, at all times of the tide, with quays 3,000 feet in length; second, of an inner dock, which large vessels could enter, or leave, for nearly six hours out of every twenty-four hours; third, of graving docks, which could accommodate the largest class of vessels, with shears capable of lifting weights of 50 tons; and fourth, of a system of railways running all round the quays, in connection with sheds and warehouses for the examination and deposit of goods, and for direct transmission to all parts of England, without change of carriage. The entrance to the inner dock was about to be widened, and both the entrance and the dock itself to be deepened, whilst the walls were to be continued round the south and west sides, with a view to the construction of another dock on the western side.

The expenditure on the docks, dry docks, custom-house, sugar refinery, workshops, warehouses, sheds, rails, and all other appliances, up to the present time had been 705,000*l.* The gross return was 53,000*l.* per annum, and although the dividend to the original shareholders had not hitherto exceeded 4 per cent. the country had been benefited by the conversion of a huge mud bank into a useful national work.

AMERICAN NOTES.

A NEW hotel has been built at the corner of Chatham and Chambers streets, New York. The interior arrangements of the establishment are said to be comprehensive, and of costly character. A new hotel, called "The Verandah," has also been opened at New Orleans, in Camp-street, opposite Lafayette-square.

Another building of a similar class, and called "The Cowherd House," has been opened at Washington. The Great Southern Hotel Company of St. Louis are about erecting an extensive building, with all the modern improvements, and according to designs by Messrs. Barnett and Weber, architects.

The Atchison and St. Joseph Railroad is to be completed forthwith, and contracts are now being entered into.

Newhaven, a small town, situated about sixty miles from St. Louis, on the Pacific railroad and Missouri river, boasts of some new buildings at present in course of construction; viz.—a church and schoolhouse, railroad depôt, saw-mills, manufactories, &c.; and an addition, with wide streets crossing each other at right angles, is being laid out, and will be rapidly built upon.

The city of Parkville has subscribed 50,000 dollars, the citizens of Smithville and vicinity a like sum, and 125,000 dollars have been collected from other sources, towards the construction of the Parkville and Grand River railroads.

A fire broke out in the Harmony Mills, Troy, N. Y. and destroyed 10,000 dollars' worth of property.

The corner-stone of a new Roman Catholic church has been laid at Boston. In the diocese of Portland there is a cathedral and six churches in progress of erection.

Activity is apparent in the building trade in Buffalo. Workmen receive constant employment; and several new warehouses of an important character have been recently erected and opened for the transaction of business.

Mr. Francis, the inventor of the new mode of transporting troops across rivers by means of an apparatus which is a large boat when afloat, and serves as a baggage-waggon on shore, has disposed of his patent to the French and English Governments, and is said to have been sent for by the Czar.

The Wisconsin Lake Shore Railroad Company was caught during the late crisis with a floating debt of 184,000 dollars, which is being carried at onerous rates of interest.

The road from Milwaukee to La Crosse will be completed within a year. The work has been completed on forty-four miles of road between Kilbourn city and Tomah. Mr. Chamberlain has contracted for the formation of the remainder.

The sum of 100,000 dollars has been appropriated for the completion of Chicago Harbour; and other appropriations have been likewise made for Western River and Harbour improvements.

The rapid growth of Stevens's Point, especially in the erection of new buildings, is announced by a local journal, which says that, on the ground of the late fire, the foundations of five new buildings are laid, three of which are nearly completed, and all will be ready for spring business. In Curtis's new block, the post-office will be situated. Scores of other new buildings are going up all over the plat. The most splendid taverns are in course of erection, especially one by Mr. Brawley, and another by Mr. Hewett, which rival the gin palaces in the great metropolis of England. The town is extending rapidly, and dwelling-houses, as fast as they are built, find occupants.

The work on the Capitol extension has been abandoned for reasons unknown to the public.

Traffic on all the railroads is increasing. A monster hotel is being built in Chestnut-street, Virginia.

The night trains running between New York and Philadelphia are now lighted by gas obtained through a cylinder, to which it is forced on from the street main in sufficient quantity for the trip, of about four hours. The cost of lighting each

carriage is but 10 cents, whereas the old system of sperm candles cost 50 cents.

The road from Nininger to Louisville will cost at the rate of 20,000 dollars per mile, or a total of 700,000 dollars. At Nininger (only one year in existence), one hundred and twenty-five houses, schools, and a Lyceum, two saw-mills, a sash factory, grist-mill, and a number of smaller works are in progress of erection. Lots bought a year ago for six dollars each, now sell for 1,000 dollars *cash*.

Lakeville, in Minnesota territory, is only two years old, and yet boasts of a number of comfortable dwellings, stores, &c. but places of worship are wanting. Masons are in great demand in Minnesota.

A new block of buildings is being erected in Main-street, Waukesha. The *Prairie du Chien Courier* says, "We notice several new buildings are in course of construction. This is strong evidence of better times coming." "It is thought a large number of additional works will be commenced this season." It further states that the local stone is durable, susceptible of a high polish, and resembles granite in texture, and white marble in colour.

A railway bridge, on the Seabord and Roanoke line, in Virginia, broke down, and eighteen cars, with their contents, were precipitated into the water, causing an estimated damage of 50,000 dollars.

Californian statistics show that insanity prevails alarmingly, attributed by some to the climate, by others to the *mal-construction of the dwellings*.

THE CHATEAU OF CHENONCEAUX.*

IN the visitors' book, at Chenonceaux, there stand recorded, in the handwriting of the great Algerian chief, Abd-el-Kader, words which, being translated, run thus:—"If Touraine be the garden of France, Chenonceaux is surely the garden of Eden." This eulogium on the situation occupied by the château of Chenonceaux will not be considered very extravagant by those who have paid it a visit.

The principal approach—an avenue of fine elms—is by no means the best point of view for forming a proper estimate of the beauty of the building. From either of the paths along the banks of the Cher it appears to much greater advantage. It may be described as built upon a bridge which crosses that river. There are eight arches, under which boats are daily passing up and down. The effect produced by this quasi-insular position is singularly pleasing. Although furnished with draw-bridges, which, when raised, render it accessible only by the river, and thus give it a certain degree of strength, Chenonceaux has no claims to be called a *château fort*. Nor are the associations connected with it of the gloomy character which generally attaches to historical buildings. It was consecrated to the pleasures of the kings of France. Its graceful turrets, its balconies, and large windows; the garden, with its gay *parterres* and low-running balustrade in place of the lofty wall; its noble, but unclosed park;—are all typical rather of the royal *maison de campagne* than of the fortress or castle.

The northern part of the building is in the debased Italian style. There are two turrets, however, on either side of the main door, which, with their high-pointed conical roofs, are exactly the same as those we find in Scotch architecture. Above this door there is an enormous salamander, in stone, the device of Francis I. On the second story of this front there are two windows, with massive semi-circular balconies, supported by corbels. The roofs are, as usual, very high pitched, and are surmounted by rails of metal foliage. As at Chambord and Blois, the dormer windows are very beautiful, while the design of each is different. Part of the building, which was added by Diana, of Poitiers, is Palladian in style. Near the river's side there stands a round tower, which, for whatever purpose it may have originally been intended, is now occupied by the *concierge*. It has a conical slate roof, surmounted by a belfry.

The grounds have very much of an English look, and contain some fine timber. To one of the many pleasant avenues in the château grounds, Jean Jacques Rousseau, during his residence at Chenonceaux, gave the name of *L'Allée de Sylvie* in some verses, one of which is here transcribed:—

"Qu'à m'égarer dans ces bocages
Mon cœur goûte de voluptés!
Que je me plais sous ces ombrages!
Que j'aime ces flots argentés!"

* This château is the subject of one of Mr. Beverley's new scenes for "The Huguenots" at the Italian Opera House—the 2nd of the 1st act.

In the year 1496 the property of Chenonceaux was purchased by Thomas Boyer, who had been chamberlain to Louis XII. As already said in a former paper, a great impulse was given to the study of architecture by the example of Francis I.; and Boyer, following in his royal master's footsteps, commenced the construction of the present château in the style of the Renaissance, having first pulled down an older building which occupied the same site. It afterwards passed, however, into the possession of Francis, whose son, Henry II., made a present of it to Diana of Poitiers. As long as Henry lived, notwithstanding the intrigues and machinations of the jealous and implacable Catherine de Medici, the enchantress retained her influence over that monarch, and he continued to pass the greater part of his time at Chenonceaux in her society. She greatly improved and enlarged it; but her plans were yet uncompleted when the king's death exposed her to all the hatred of Catherine, who, from the minority of her son, Francis II., became virtually the ruler of France. Diana was banished from the court, and in 1560 was driven into a bargain, by which she accepted the château of Chaumont in exchange for that of Chenonceaux. In the same year the queen-mother brought her court to the château to welcome her son Francis and his bride, the beautiful but unfortunate Mary Stuart. This was the brightest period of Mary's life. Beloved by her husband, and amid a throng which numbered among it the bravest of France's chivalry and the fairest of her daughters, the observed of all observers, little could she then dream of the dark future which was in store for her.

"The homage of a thousand hearts—the fond deep love of one,—
The hopes that dance around a life whose charms are but begun,—
They lighten up her chestnut eye, they mantle o'er her cheek,
They sparkle on her open brow, and high-soul'd joy bespeak."

And yet the following year saw her a widow, and shortly after she took what, her foreboding heart too truly told her, was her last look of that France which was so dear to her.

The nuptials of Charles IX. and Elizabeth of Austria were celebrated with great splendour and magnificence at Chenonceaux. Here also, on Henry III. ascending the throne, Catherine gave a grand banquet, which is said to have cost no less than 100,000 livres. A curious insight into the want of morality and looseness of the manners of the French court at this period is obtained from the following description of this banquet, extracted from a journal of the time:—"En ce beau banquet les plus belles et honnestes de la cour à moitié nues et ayant leurs cheveux espars comme espousées furent employées à faire le service. Madame de Sauve estoit maîtresse d'hostel, et tout y estoit en bel ordre." Our ideas of wherein *bel ordre* consists are considerably altered since those days.

The plans of the additions and alterations made by Catherine de Medici are still preserved in the library of the château. She subsequently bequeathed the château to her daughter-in-law, Louise de Touraine, who retired thither shortly after the assassination of her husband, Henry III. Visitors are shown her sleeping-room, which is still hung with black tapestry. Above the chimney-piece is the inscription,—

"Saevi monumenta doloris."

The compartments of the ceiling, which are grey and black, are very beautifully carved. This room opens into what was formerly an oratory, but is now fitted up as a most charming library, with stained glass windows. The Queen Louise passed the remainder of her life at Chenonceaux in prayer and in acts of charity to the poor of the neighbourhood.

In 1598, Henry the Great, accompanied by Gabrielle d'Estrees, paid a visit to Chenonceaux. After that, the château changed hands several times, and in 1733 was purchased by Monsieur du Pin. This gentleman and his wife were both well known in the literary world, his reply to Montesquieu's "Spirit of Laws" being considered the best that has been written. It was their pleasure to collect around their board at Chenonceaux the literary and scientific celebrities of the day, and Bolingbroke, Voltaire, Jean Jacques Rousseau, Bouffon, and Montesquieu, were their frequent guests. Rousseau, who was engaged at one time as Madame du Pin's amanuensis, and tutor to her son, composed *Le Dévin du Village* there, and it was performed for the first time in one of the rooms of the château, which was fitted up as a theatre. This room still retains its theatrical furnishings. Owing to the great esteem in which M. du Pin and his family were generally held, Chenonceaux suffered but little at the time of the Revolution; and most of the apartments to which historical interest is attached retain their original furniture, paintings, &c. The collection of objects of art is particularly rich: Venice glasses, bronzes by Cellini, china enamelled by Leonard de Vosges, medallions, and many other interesting articles of vertu are to be seen. Chenonceaux is fitted to give us a tolerably good idea of the internal architecture and furnishings of the period of the Renaissance. The walls are not panelled, as is the case in English houses of the same period, but are hung with tapestry. Most of the floors are paved with porcelain. The ceilings are all panelled, the compartments being elegantly carved, and either gilded, or richly blazoned with colour. The fireplaces have projecting mantles, which run up to the ceiling, the mouldings containing some very beautiful specimens of foliage.

The little chapel, which occupies the north-east corner of the building and partly overhangs the river, has been restored lately and is very beautiful. The cushions of the royal seat and *prie-Dieu* are embroidered with *fleurs-de-lis*.

Through the liberality of the present proprietor, the Comte de Villeneuve, who is a grandson of M. du Pin, the most interesting rooms are thrown open to visitors.*

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday, the 17th instant, the ordinary meeting was held at the rooms in Grosvenor-street, Mr. Henry Ashton, one of the vice-presidents, in the chair, when various donations were announced.

Mr. Octavius Hansard, in presenting copies of several parliamentary papers, gave a concise account of the proceedings that have attended the recent acquisition by the country of ancient marbles; this we have printed under another heading.

A letter from Dr. Petrie was read, acknowledging with thanks his election as hon. fellow.

Mr. George Morgan, fellow, then read a paper on "Public Competitions for Architectural Designs," printed in our last number.

Mr. Papworth thought that this question of public competition for architectural designs was one that called for serious deliberation. Mr. Morgan suggested that the Institute should set the matter right; and really, if that could be done, all that was wanting would be achieved. Mr. Morgan called on some two hundred men out of a couple of thousands in the country, to bind themselves to a certain course, forgetting that these two hundred men did not compete at all, excepting under special circumstances. Now the Institute, no doubt, presented a majority of the architectural skill and eminence of the country, and a list of members of which the profession might be proud, and they were asked to arrange for themselves certain conditions, without which they should not compete. How could this be practically or consistently effected? and how could they induce other architects in all parts of the country to accept and be governed by the conditions proposed? Nothing was to be accomplished without an alteration in the law of the land. Suppose the proposition, however Utopian, was adopted by all the architects, there would be found plenty of others to do so,—men practising as engineers, and surveyors, and builders, who might call in architectural assistance to prepare specious and showy drawings, and on which the committees would proceed.

Mr. Kerr said he was not much of a competition man, but liked to look at this question in its commercial bearings. He would suppose a case, as the lawyers have it. Boys, A, B, C, and D, united to invest sixpence in buns. A secured the sixpence to himself, and proceeded to adjudicate by eating them all up; and so it was in competitions: the result was arrived at in favour of one, to the sacrifice of all the others. What was wrong in the system, was the want of sound commercial principle. That was the screw that was loose in the system of competitions. As an illustration of fair dealing in matters of competition, he might mention the case of a competition for a banking-house in the North some years ago, where three architects competed, and where 100 guineas were awarded to each, the committee selecting the best design. The establishment of an order of merit would make up the commercial balance. After alluding at some length to commercial correctness in competition, Mr. Kerr proceeded to contend that the proper and legitimate judge of merit was the architect. He only was the fitting judge of the appropriateness of an architect's design, and all the committees in the world would never persuade him that they possessed the knowledge that was adequate to entitle them to adjudicate in matters architectural. The calling in of an architect to adjudicate was not only a benefit to the competitors, but to those who offered the competition, and was in itself commercially sound. He laid great stress on an order of merit in public competitions, and he thought it was a pity it had not been adopted by Government in the late

* For previous articles on French châteaux see pp. 50, 308.

competitions. Thus architects, if they did not get money, would obtain reputation. In conclusion, he would throw out for consideration a scheme of his own: instead of advertising for designs, he would advertise for candidates. The candidates should state their qualifications, and the architectural judge could decide at once; and he never heard of a case in which the award of an architect had been called in question, or pronounced to be corrupt.

Mr. Fraser referred to some passages in the preface to the catalogue of designs for the Houses of Parliament, in support of the opinion that, in cases of architectural competition, the best judge was an architect himself. It was on this principle that the Propylea, the Erictheium, and other great works of antiquity were constructed. A judge and director were appointed by the Athenian assembly, of which architects were members, and they decided on the subject. In the case of the Houses of Parliament, the judges acknowledged their inability.

Mr. Jennings expressed his opposition to the principle of competition altogether, and observed that many went into them on the ground of knowing one or more of the judges, the judges under the present system being almost always incompetent as a body. Good results no doubt arose from the instigation these competitions gave to the production of designs for exhibition by young men; but he objected altogether to the principle on which they were conducted, and he believed that, with reference to selections, the best selection had always taken place where an architect had been called in to advise the committee.

Mr. Hussey contended that one of the great evils incident to the present style of competition was the loose and faulty system that obtained in matters of instruction.

Mr. M. D. Wyatt could not agree with Mr. Morgan in thinking that the revival of Mediæval art in the present day was the result of competition. No doubt it had given it an impetus, but hardly to the extent alluded to. Competition, no doubt, had vastly increased the profession, but whether beneficially so, it was difficult to determine. One of the great evils of competition was that there was no previous educational test of the character of those who competed, and of the ineligibility of those who were employed; and this naturally led to a vitiated system. One of the great mistakes of the present day was that the architect was never called in early enough; and he could not agree with Mr. Kerr that competition for excellence was a commercial matter, however much it might be in matters of cost.

Mr. Hansard thought that much was due to Sir B. Hall for the part he had taken in favour of the profession in the late Government competitions, and for the manful manner in which he had spoken up for it.

The chairman remembered that, in the case of the designs for the Houses of Parliament, a general meeting of competitors was held at the Thatched House to oppose the adoption of Sir C. Barry's design, so that in that case, at any rate, if left to the competitors, his design would probably not have been selected. Everything depended on good advice in preparing the instructions.

Mr. Hesketh thought it was desirable to adopt the suggestion of Mr. Morgan, that the question should be taken up by the Institute. Good might result from the promulgation of a set of rules for the guidance of committees.

Mr. Kerr alluded to the way in which the question had been taken up by the Architectural Association, who would very likely be disposed to adhere to any system the Institute might recommend.

Mr. Wyatt conceived that one of the more injurious effects of competition was, that it called away the attention of the young architect and student from his more serious studies, to compete for the attainment of objects that require the unremitting attention and experience of at least twelve years of labour.

Mr. Morgan would be perfectly satisfied if his paper had only the effect of drawing attention to the system of competition, which he could not help thinking had been very much instrumental in bringing architecture to the position it at present occupied.

CONVERSAZIONE OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

EARL DE GREY received the members of the Institute at his residence in St. James's-square, on Friday, the 21st inst. and invited a large number of distinguished persons, including many ladies, to meet them. Drawings, and other works of art, covered the tables in all the rooms but one, where they were required for the exhibition of a generous hospitality. There are few houses in London so well adapted for receptions of this kind as that occupied by Lord de Grey, filled as it is, too, with rich furnishings and noble pictures. There is but one thing wanting, and that is a little more cordiality and personal interest on the part of the accomplished and noble host. Many members of the Institute, who were received with a bow, two yards off, by the president some twenty years ago, and have visited annually, or nearly so, ever since, found precisely the same reception on Friday, the 21st, and nothing more. Such "mutual relationships" are worth study. However, it was a brilliant evening, as it always has been, and is of great value to the Institute.

At the meeting to be held on the 31st, the Rev. Richard Burgess will read a paper on the Egyptian Obelisks now in Rome, and will speak with reference to the introduction of monoliths in the metropolis. Something will probably be said, too, by Mr. John Bell, of the entasis to be given to obelisks.

We must note, for the information of those whom it may concern, that the recent election of office-bearers has led to the expression of more dissatisfaction than has ever before reached us from the Institute.

CHURCH-BUILDING NEWS.

Whittlesea.—At a meeting of the Local Burial Board, on the 19th ult. the following tenders were received for the new chapels, lodge, &c.:—

Green, London	£1,398	0	0
Gray and Son, Cambridge	1,295	0	0
Ellis and Son, Peterborough	1,198	10	0
Bennett and Son, Whittlesea	1,185	17	0
Mills, Whittlesea	1,173	0	0

Mr. Bennett's tender was accepted. Mr. R. Hutchinson, of Huntingdon, is the architect.

Tunbridge.—A fund is being raised for the purpose of restoring the chancel of the parish church, according to a design executed by Mr. Hope Scott, of London. The sum at present obtained is insufficient.

Cheriton.—The restoration of the parish church has been completed by the repewing with light open benches, and the opening of a new organ.

Denton.—There has been an addition of three more stained glass windows to the nave of Denton church. The whole of the windows in the church are now completed. The east window has been entirely restored with new stone work, and the stained glass consists of three full-length figures of St. James, Our Lord, and St. John. The side windows in the chancel are filled in with subjects from the life of Our Lord, and the south window with two figures of St. Peter and St. Paul. The nave windows are of geometrical patterns. A new description of ventilation is said to have been introduced by the artist. The chancel and nave have undergone great alterations, and the whole of the unsightly pews removed to make way for oak stained seats. The cost of all has been defrayed by the rector, the Rev. G. Crespiny Lamotte. The artist employed for the execution of the windows was Mr. Charles Gibbs, sen., of London. Mr. Gibbs also executed the church windows for Deal, Patrixbourne, New Hythe, and East Malling, in the same county.

Odiham.—Messrs. Hardman and Co. have recently erected, in the parish church of Odiham, Hampshire, three stained windows in memory of the late Lieut.-Colonel Short. The windows are of the Decorated period. The chancel window consists of three lights with tracery. In the centre light is the figure of Our Lord on the Cross, surrounded by Seraphim, rays, and clouds. At the foot of the Cross kneels the Centurion. The head of this light is filled with a foliated canopy of vinework. At the base of this light is a representation of our risen Lord and Mary Magdalene. The dexter light contains the Virgin and St. Mary the wife of Cleophas, looking towards the Cross. The sinister light contains the disciple St. John and Mary Magdalene, kneeling. In the heads of these lights are figures of weeping angels, and others bearing the sun and moon veiled. At the base of the dexter light is the Centurion beseeching our Lord to heal his servant. At the base of the sinister light is the baptism of the Centurion Cornelius by St. Peter. The east windows of the north and south aisles to the chancel contain each three lights and tracery. The side lights are filled with grisaille and monograms. The centre light in the north aisle represents the Good Samaritan. The centre light in the south aisle represents the Centurion with the model of a church in his hand.

Weston-super-Mare.—The new Independent chapel here, opened on 29th ult. has been erected at a cost of 2,300*l.* including fittings: of that amount, 1,700*l.* were contributed by Mr. Richard Ash, of Bristol: about 2,150*l.* have been raised. The chapel consists of a nave, north and south aisles, an apse at the east end, and a tower with a spire at the south-west angle. It will seat about 500 adults on the ground-floor, with provision for a gallery at the west end. The walling is quarry-faced snech-work of dark-coloured native stone, and the dressings Bath stone boasted. The west end contains a four-light window in the centre, with two smaller windows on each side of a niche underneath, and a doorway opening into each aisle. The north and south sides have each a range of four three-light windows, of alternately different design. The principal feature of the design is the tower, which forms the main entrance. The upper part is an octagonal lantern, with the lights filled with slab tracery. Above the lights are crocketed canopies, surmounted by carved finials, and finished by grotesque heads at the terminations. The lantern is finished by an open carved parapet and carved pinnacles. Behind the parapet rises the spire, surmounted by a gilt cross, being in height 85 feet from the ground. The windows of the apse are filled with stained glass. Behind the chapel are a school-room, about 40 feet by 20 feet, with lofty open roof, and a vestry, boiler-room, and outbuildings. The architect is Mr. Pritchett, of Darlington. The contractor for the general work is Mr. Pollard, of Taunton. The ironwork and gasfittings have been furnished by Messrs. Hart, of London. The carving has been executed by Mr. Herley, of Ellastone, under the general contractor. The warming and ventilating were done by Messrs. Haden, of Trowbridge; and the stained-glass windows by Messrs. Hodgson, of York.

Manningford Bohune.—The district of Manningford Bohune, which is part of the parish of Manningford Bruce, has hitherto had no church of its own; but this want is now about to be supplied, the foundation-stone of a church for that place having just been laid. The church, which is to be in the Early English style, is from the design of Mr. W. C. Clacy, of Devizes, architect, and is calculated to seat 160 persons: the cost, including boundary walls, will be about 1,300*l.* of which 1,100*l.* are already in hand; the Rev. Canon Howman, rector of Barnsley, Cirencester, contributing 700*l.* Messrs. May and Son, of Bath, are the contractors.

Broughton.—The old church has been demolished, and the foundation of a new one has been laid about a quarter of a mile from the old site, in a pleasant spot on Yorton farm. The style is Early English, from a design by Mr. T. D. Barry, of Liverpool. The building, calculated to contain about eighty sittings, is 44 feet long by 17 feet wide. There will be a small vestry on the north side, and a bell-turret. Messrs. Smith and Kank are the builders. Sufficient funds are not yet raised for the completion of the edifice.

Plymouth.—A mural monument of white marble, from the design of Mr. Damant, executed by Mr. Bovey, has been erected in the outer vestry of St. Andrew's Church, Plymouth, to the memory of the late Mr. Augustus Hamilton Bampton, civil engineer.

Cardiff.—A Hebrew synagogue has been opened in Cardiff. It is capable of accommodating about 100 persons. It is situated in East-terrace, and has been built by Mr. Edwards, of Newport, from a design supplied by Mr. Paul, of Cardiff, architect, at a cost of 600*l.*

Merthyr.—The new church at Penydarren has been opened. It is a plain building, almost devoid of ornament, and is surmounted by a bell-turret, rising 16 feet from the ridge of the roof, and 60 feet from the ground. Its length externally is 91 feet, the width 32 feet, and height to the ridge of the roof, 44 feet. In style it is what may be termed Early Pointed Gothic. It has four windows on each side, of freestone work, and two at each end. The roof is of reddish slate. The interior is open from end to end. The edifice has been erected from the design of Mr. Brigden, of Dowlais. He submitted two designs, the one simple, the other more ornate. Preference was given to the simpler structure, and Mr. John Gabe contracted to erect it for 820*l.* The work was carried out under the inspection of Mr. M. Davies.

Hanmer.—The vicar of Hanmer, in correcting a statement made by a correspondent of the *Shrewsbury Chronicle* as to the repairs of Hanmer church, says,—"The 'superb chancel window of stained glass,' exists, alas! only in your correspondent's imagination. There is not a particle of stained glass in the chancel. Of the real improvements which are transforming Hanmer church from a disgrace into an honour to the parish, nothing is said,—such as the entire relaying of the floor, the re-arrangement of the seats, and the almost total removal of the unsightly gallery; nor is the fact alluded to that the restoration of the beautiful oak roofs of the north and south aisles was executed entirely at Sir J. Hanmer's expense, by Mr. Morris, of Chester, as a gift to the parish."

Edgeley.—A new church, dedicated to St. Matthew, has been consecrated in the populous district of Brinksway. The land, about an acre, was given by Mr. Robt. Gee, of Holly Wood. The building is of stone. There is to be a tower and spire 165 feet high. The nave is pewed with open seats. There is accommodation for 600 persons, one half free. The cost has been about 4,000*l.* The design of the edifice was furnished by Mr. J. S. Crowther, of Manchester, architect. The style is Transitional Geometric, the windows containing fully developed tracery, each member of the tracery springing out of the soffits of each other. The plan of the church consists of a nave, with north and south aisles, and fully developed chancel. Messrs. Longson, builders, were the contractors for the work, except the masonry, that having been taken by Mr. Haywood, of Alderley.

Ruabon.—The new Congregational Chapel here was opened on the 5th inst. The cost of the edifice is somewhat more than 1,200*l.* about 300*l.* of which still remains upon it. The building is in the Early Decorated style of Gothic architecture. It is 48 feet long by 28 feet 8 inches broad, and will accommodate 250 persons. The design has been prepared and carried out by Mr. W. I. Mason, of Liverpool, architect, the contract for the works being taken by Mr. John Williams, of Ruabon.

New Malton.—St. Michael's Church, New Malton, has been restored and re-opened. Besides various other restorations and alterations the whole of the building has been rechiselled, the old pews and west gallery removed, the whole of the windows restored, and a new one inserted on the north side: the chancel is new. The *tout ensemble* of the edifice is that of a new one, in the Norman style: in the interior every vestige of antiquity has disappeared. Mr. Chantrell was the architect employed in the restoration, and Mr. J. C. Teale, of Malton, the builder; Messrs. Gibson and Skirrey, the contractors for the woodwork; Mr. J. Moca for the ironwork, gas fittings, and warming apparatus; Mr. J. Jackson, the plumbing; and Mr. J. Shepherd, of Malton, the painting.

Darlington.—The new cemetery for Darlington was consecrated on 28th ult. It is situated about a mile from the centre of the town, and comprises twelve acres, laid out and planted by Mr. J. Bowker, of Scarborough, gardener. The chapels stand on an eminence, dividing the consecrated and unconsecrated portions of the ground, and are attached to the central tower by porches opening from the archway through it. The buildings are designed in the Late Decorated style of English architecture. The walls are built of snecked quarry-faced wall stone, from Dunhouse quarry, the dressings being of tooled stone from the same place. Each chapel is lighted by a four-light window at each end, and two two-light windows at each side. The floor is paved with Minton's tiles, and the windows filled with Hartley's cathedral tinted glass. The tower, which is the principal feature of the design, forms a carriage-porch in the lower part, through which funeral processions will drive for the mourners to alight at the porches under cover. The upper part forms an octagonal lantern containing the bell (cast by Warner and Sons), and has carved canopies, open parapet and pinnacles, and is surmounted by a spire terminating in a gilt cross 100 feet from the ground. The lodge near the entrance-gates is built of red brick with stone dressings. The buildings are executed from the design and under the superintendence of Mr. J. P. Pritchett, architect. The masonry and carving were executed by Mr. W. E. Jackson, of York. The joiners' work was executed by Messrs. Elwin and Son, of Darlington. The cost of the land was 2,400*l.* and the entire outlay about 7,000*l.*

Dublin.—The new Presbyterian Church, at Sandymount, was expected to be opened for divine worship on the 23rd instant. It is picturesquely situated on the angle of the Sandymount-road and Tritonville-avenue. It is in the Decorated style of Gothic architecture, and is in form a simple oblong or double square, the interior dimensions being 60 feet long by 30 feet, giving accommodation for 300 persons. A large porch, forming the main entrance, occupies the westmost bay on the north side, with small tower in the west angle, in which provision is made for a staircase to a gallery (when it is required), to contain about 120 sittings. The tower is capped with a slated spirelet. The church is divided by buttresses into five bays, having two-light windows in each, and a large five-light window in the west gable, with small single-light windows below for lighting under the gallery. In the interior, the roof is open up to the ridge. The woodwork is stained and varnished. The architects are Messrs. Hay, of Liverpool, whose designs have been carried out by the contractor, Mr. S. H. Bolton, of Dublin.

PROVINCIAL NEWS.

Redhill.—The Nuisance Removal Committee for the borough of Linkfield, have called for tenders for the construction of a sewer, which will form the commencement of a system of sewers for draining the borough.

Worcester.—The New National School building, in Mill-lane, is nearly completed. The materials are red brick, faced with Bath stone. About 500 children can be accommodated. There will be an infants' school and a mixed school, also a residence for the infant school-mistress and another for the master and mistress of the mixed school. Mr. Elmslie was the architect, and Mr. Davis the builder. Lady Emily Foley presented the land for the site, and the funds for the erection were raised by a Government grant of 1,215*l.*, and a public subscription, to which the Morris family gave about 600*l.* The building will cost nearly 3,000*l.* There is still a small deficiency.

Weymouth.—At a meeting of the Town Council of Weymouth, the proposal of Mr. Joseph Cubitt to superintend the erection of the Pile pier on the following terms, namely, — 200*l.* for his own services and expenses, and three guineas a week for a clerk of works to be appointed by him, with the clerk's expenses to Weymouth and back, was considered and agreed to, and Mr. James Payne, of Rotherhithe, appointed as the contractor, on the usual condition as to his sureties.

Leeds.—The salary of the borough surveyor of Leeds has been advanced to 300*l.* per annum,—no very large sum, considering the extent and importance of the town.—The Town Council has voted 800*l.* for a clock and bell for a tower to the new town-hall; 2,000*l.* for laying out the exterior of the building; and 1,650*l.* for gas chandeliers and fittings for the large hall and other parts of the building, in addition to 600*l.* previously granted for the purpose. The mover that these sums be granted, stated that, with reference to the clock and bell, a number of estimates were sent in, and the lowest, or the lowest within 1*l.* or 2*l.*, was from a first-rate maker, who offered to make an illuminated clock, with four faces of 13 feet diameter, for 500*l.*; if chime-works were added, 150*l.* more; a bell, weighing 35 cwt., 300*l.*, or 45 cwt., 400*l.*; and if quarter bells in addition, 280*l.* extra. If chimes were preferred, he offered to provide a chime of twelve bells, weighing ten tons, for 1,470*l.* The committee proposed, however, merely to have a clock, and one bell weighing 35 cwt., and if quarter bells or chimes were afterwards wanted, they could be added without difficulty. With regard to the tower, he added that the works had been suspended because they had no stone, but it was probable it would not be completed before the opening. The architect thought it desirable that sufficient time should be allowed for the foundation to consolidate.

WATER-CISTERNS AND FIREPROOF STAIRS.

I CONSIDER the suggestions on this subject have not yet been fully responded to; therefore I beg to add a few practical remarks, having made cisterns of brick and cement, terra cotta and slate; also stairs of the same materials for a long time. I consider no water-cistern is complete or adapted for general use, especially for towns, without it at the same time acting as a filter. I have not seen or heard of such a thing made for sale and ordinary use, though it is easily accomplished. In the country most wells have some animalculæ, more than it is agreeable to swallow, in the water.

For economy, I recommend brick on edge in cement for cisterns to hold 200 or 300 gallons; if larger, half a brick thick, and cemented inside; this, with a filtering stone partition, can be made for about half the expense of earthenware, and water would keep more pure in cemented cisterns. There is so much risk in burning earthenware of a size for general use for filtering, that it increases the cost too much. I have one in use I made, containing twenty-four gallons, that filters and supplies a family, with only to pump into it once a day, and let out the animalculæ and filth weekly. This sort of cistern can be made by a handy bricklayer who knows *how* to use cement *properly*.

Slate cisterns are perhaps the most applicable for general use, being lighter to move about than even brick and cement; but the cost, on the same filtering principle, is from twenty-five to thirty-five per cent. more than brick and cement.

For fire-proof stairs I recommend slate, especially Valentia, for economy, strength, and general use, being more likely to compete with wood than earthenware. Where there are not two supporting walls, I make brick on edge in cement for the other end; but they can of course be built in the wall, the same as stone, and infinitely stronger than Portland stone, especially for stairs of public resort or amusement, which get weakened by wear; and, loaded as they sometimes are, it is wonderful there are not more accidents, like that which occurred at Chelmsford, more so to those by whom Portland is worked, knowing what large fossil shells occur in it, that tend to weaken it for such purposes, especially when cut of the usual form.

The risers of slate stairs can be drilled in various devices, very simply, for cheapness, instead of the frequent dark closets under, in small houses; and for superior houses they admit of tasteful treatment. The risers may be formed of Minton's, or other inlaid tiles, terra-cotta panels, &c.

For a Tudor villa I have formed the risers in complete quatrefoil and other panels, in Keene's cement, backed with fine perforated zinc, painted black; the stair-carpet and rods being turned under the nosings. The newels, balustrade, &c. also of Keene's cement, answer admirably; the landings should be of slate, fireproof as can be, and not expensive, as no ceiling is required under it: by these means fireproof staircases are as applicable to the cottage as the mansion, but in most ordinary dwellings built for profit, *fireproofing* is too little thought of, but whatever comes cheapest, regardless of durability, so that it is but of little use to recommend improvements unless cheapness is combined. Some will rest contented because they are insured, and go on making preparation for a fire; but what a source of satisfaction to know if it *does* happen, there are ready means of exit by the stairs, the necessity of which I need not urge.

I will conclude by making a suggestion to iron-founders to cast step and riser in a piece, some with a neat open riser, but serrated on the top to prevent their being slippery, or provision for a strip of lead on the front edge.

I write somewhat as I feel on this subject, having been a sufferer by fire twice. JAS. PULHAM.

A WOODEN CHURCH.

THE wooden church lately erected at Upper Holloway, for the Rev. Henry Hampton, from the designs of Mr. George Truefitt, architect, was completed in six weeks by Messrs. Evans, builders, at a cost of 700*l.*: it contains 900 sittings. The diameter of the building is 84 feet, height to top of cross 72 feet, the span of roof 64 feet, being only 2 feet less than that of Westminster Hall. The appearance of the interior is extremely light and effective, and shows what may be done in church building with inexpensive materials.

We are informed that if the building had been erected as a permanent one, with brick walls, slate roofs, &c. the amount spent would even then have been under thirty shillings per sitting.

The building is a polygon constructed with twenty-four principals, the outer upright posts 9 in. by 3 in. 16 feet high, being well braced together, having boarding inside and out, and being filled in with sawdust. The inner posts and principal rafters are 7 in. by 3 in.; the other framing of principals being 6 in. by 3 in. Principal rafters, 59 feet in length, join into a ring 60 feet from the floor. The ribs of principals are canted off at angles, and meet in a ring 16 feet diameter, and 47 feet from the floor: these two rings are each 8 in. by 4 in., surrounded with plates of iron, and well bolted in every part. Above the upper ring is a lantern for ventilation, and below it, for 10 feet, are large sheets of Hartley's rough glass, through which the building is lighted. The under sides of the ribs are coloured bright blue. Between each principal at the commencement of the ribs a pair of struts rise, meeting each other, where they help to support a purlin 12 feet above.

The Decalogue was designed and executed by the architect. The seats rise from the centre. There are five entrances, vestry, bell-turret, and a good organ, by Hunter and Webb, for which the gabled roof was projected.

THE BUILDERS' BENEVOLENT INSTITUTION.

LAST week the thirteenth election of candidates for the benefits of this valuable Institution, took place at the London Tavern, Bishopsgate-street, Mr. George Bird, treasurer, in the absence of Mr. Alderman Rose, occupying the chair.

The chairman, in opening the proceedings, said that upon this occasion, as far as he was concerned, there was very little to be done. They had met together for the purpose of electing from nine male and five female candidates, two persons, one from either sex, as recipients of the benefits attached to the Institution; but at the same time he could not but express his sorrow that their means were not large enough to enable them to relieve a greater number of the numerous applicants. He however hoped that those who had not yet contributed to aid and support the funds of the Institution, would now come forward, and by preserving the interests of that Institution, enable them to relieve in future a greater number of the aged and necessitous, and smoothe the declining years of their less fortunate brethren. He concluded by declaring the poll open.

The names and numbers of the successful candidates having been announced,

The chairman rose, and said he found with much surprise, that 250 subscribers had not balloted, which on the whole would amount to 800 votes. He regretted that subscribers did not take more interest in the candidates, and exert themselves, so that a return of their votes might be recorded. He could not, by the way, help referring to one poor woman, who had, previous to her application, broken her thigh, and subsequently her arm.

Mr. Joshua Higgs hoped that the provincial towns would form committees, and like the old Brighton branch, exert themselves to aid the parent Institution.

Mr. Williams (of Brighton), said in one sense he could not but say he was sorry that his candidate had been successful, because he thought she had supplanted one in London, who perhaps more needed the Institution's benefits. He regretted that the state of the funds would admit only of the election of two candidates, as he also did for the large number of the necessitous, for whom he deeply felt and sympathized.

On the motion of Mr. Joseph Bird, a vote of thanks to the chairman, for the efficient manner in which he had fulfilled that duty, as also for his persevering and untiring efforts for the promotion of the welfare of the Institution, was passed.

A vote of thanks to the scrutineers, Messrs. Cozens, Higgs, and Thorn, concluded the proceedings.

SCHOOL OF ART, YARMOUTH.

THE distribution of prizes to successful students in the late local competition for medals and prizes in the School of Art, Yarmouth, shows us that even in a comparatively small town an art school may be of considerable advantage to the inhabitants. The difficulty of keeping alive the interest of provincial art patrons, and the sluggishness displayed by those for whose benefit art schools are established, are among the evils which an art master has to contend with: when he succeeds in both overcoming the latter and maintaining the former for a moderate length of time, success in his school must follow as a natural consequence. This, however, is not an easy task, as those have felt who have more encouraging theatres of work than Great Yarmouth. It would appear from the provincial report of a meeting convened in the Town-hall at Yarmouth, for the distribution of prizes obtained by art students there, that both of these objects have been tolerably well accomplished, for we find that after many changes and reverses since its first establishment, in 1854, the School of Art has now become recognized by the town authorities, and, together with a school of science (recently established there also), considered deserving the support and co-operation of the Mayor and Council of Yarmouth as representatives of the town itself. This is a sensible step, and one which, if consistently carried on, may contribute very materially to the prosperity of the locality, as well as to its education and refinement.

The number of prizes and medals obtained by the students and pupils of the Parochial Schools is much larger than in any previous year; and, from the number of the parochial pupils, we should be inclined to think that the system of general art education is successfully carried on. We must again caution masters of art schools against the notion of making parochial teaching a secondary consideration. It is the most important of their duties, though by no means necessarily to be carried on by themselves in person. Mr. Chevalier, the master at Yarmouth, seems to understand this, and the people there are indebted to him for this as well as for his success in other things.

IRISH NEWS.

A new banking-house for the National Bank is being built at Clonmel, in a prominent position. It has a frontage of about 70 feet, to Bagwell-street a similar depth, and is raised to level of first floor. The style is Italian, and the centre, 45 feet in width, projects from the sides, in which the entrance-doors are placed. The lower story is rusticated, and has vermiculated work round the window opes, and the upper windows are square-headed. The whole surmounted by a main cornice, above which is a balustraded parapet, continued the extent only of the central projection. Internally it contains the usual accommodation for manager, clerks, and the public. Mr. Caldbeck, architect. Mr. Wm. Brash, contractor.

The same directory and the same architect are building a bank at Cashel, Italian in character, three stories high, with a frontage of 30 feet. The lower story is rusticated, and has large semi-circular-headed windows.

Likewise, at Mullingar, three stories high, and 50 feet frontage, with all the usual requirements internally.

Ballyfin church, situated on the estate of Sir Charles Henry Coote, bart. has been remodelled, and a vestibule, 15 feet square, with vault underneath built. The roof, which formerly had a flat ceiling, has been made open, and the timbers stained and varnished, as also all the internal fittings. A semi-octagon transept, with additional sittings, has been added. Buttresses are introduced externally, and new Gothic-headed windows built. The outside of the walls is finished in Portland cement, and the tower has been ornamented with finials and battlemented parapet, the total height to top of spire being now 60 feet. Expenditure about 1,100*l*. Mr. Caldbeck is the architect. Mr. Waldron, of Edenderry, the contractor.

Schools for 200 children are to be built at Drogheda, in connection with the Presentation Convent. Mr. Caldbeck, architect.

A new convent chapel has been built at Rells, and consists of nave, chancel, and organ-gallery; is 38 feet by 18 feet, independent of chancel; style Gothic. The east window is decorated, and filled with stained glass. The roof is of open timber work, stained and varnished. Material of walling, black stone, and lime stone dressings. Mr. Caldbeck, architect; Mr. Nutty, of Rells, the contractor. Cost 700*l*.

The foundation-stone of a new Roman Catholic church has been laid at Ringsend, Dublin, and the building will be dedicated to St. Patrick. It adjoins the bridge, and occupies a site of 174 feet by 106 feet. There are on it at present two buildings, one a school, the other a presbytery.

Tenders are being received for alterations and additions to Mayo Court-house, according to designs by Mr. Carson, architect, who recently obtained a premium of 50*l*. for same in competition.

A new mansion, of important character, and occupying an area of 85 feet by 40 feet, is being erected at Williamstown, near Castlebellingham, for Finlay Chester, esq. Mr. Caldbeck, architect.

Considerable additions and alterations are being made by the same architect, to Knock Abbey Castle, for Myles W. O'Reilly, esq. The present building is in the Baronial style, and a new front and flank are to beadded. A battlemented parapet, square tower, and transomed windows, with label mouldings, are chief features. Mr. Caldbeck, architect.

THE IRONMONGERS' ASSOCIATION.

ON Wednesday evening the second annual dinner of the above Association took place at the George and Blue Boar, Holborn, under the presidency of Mr. W. S. Burton, who was supported by Messrs. Hibbert, Atkins, Wilson, Smart, Critchley (of Sheffield), Mr. Smith (of Birmingham), and many influential members of the trade. About 120 individuals sat down to dinner.

The objects of the Ironmongers' Association, it may be well to mention, are to promote a friendly and amicable feeling amongst all the members of the trade; to obtain and give information respecting assistants and vacancies; to assist (by means of a loan without interest), any member who, from accident, illness, or any unavoidable cause, may require such temporary assistance; to solicit from manufacturers and others any new patent, pattern, or invention, for the purpose of having a quarterly exhibition; and to establish a library and lecture-room, where the mind may be developed and improved, and the trade derive a benefit. These advantages are confined to persons who are acting in the capacity either of traveller, assistant, clerk, or warehouseman, in the ironmongery or metal trades.

After dinner, and the usual loyal toasts had been given and enthusiastically received, the second annual report was read by the secretary, Mr. J. W. Sutton. It exhibited a very marked success in the operations of the Association. Commencing with the increase of patrons and members, the past year recorded 35 new patrons and 57 members, making now in all 41 patrons and 124 members. The committee referred with pleasure to the great benefit the various lectures delivered during the year had produced, especially the one by Mr. Hobbs on "Locks."

The chairman, in proposing the toast "Success to the Ironmongers' Association," remarked upon its original and independent character. It bore little, if any, resemblance to other societies established in connection with the various branches of their trade, for they partook almost of the character of peculiar pecuniary institutions, while in the Ironmongers' Association, money, although an element, was so very subordinate, as far as the objects were concerned, that it could scarcely be regarded as an element in its constitution. He looked upon the Association more in the light of a training and educational institution than as a benevolent society; and although he thought it was susceptible of improvement and enlargement in its own sphere of action, he could not shut his eyes to the fact that much good had already been effected through its agency.

METROPOLITAN BUILDINGS AND THE METROPOLITAN BOARD OF WORKS.

AT the meeting of the board to be held on Friday, 28th, a statement from the Committee under the Building Act will be brought up;

Reporting, amongst other matters,—

"That, from the inquiries instituted by the Committee, it appears that the district surveyor, Mr. Foxhall, did not fail in his duty with reference to the construction of the fire-place, at No. 13, Sutherland-terrace, Pimlico, in consequence of the faulty construction of which a fire occurred; and recommending—That the district surveyor be instructed to summon the builder who was engaged in reinstating the premises after the fire, for not giving notice of the reinstatement.

That, in the case of the fire which occurred at No. 7, Hyde-park-terrace, the fire-place of the house was constructed contrary to the provisions of the Metropolitan Building Act; that the district surveyor received notice of the intention to alter the premises, and ought to have superintended the work, and detected the faulty construction of the fire-place in question; and recommending—That a communication be addressed to Mr. Gutch, the district surveyor, informing him to that effect, and also informing him that a serious fire has arisen, from similar circumstances, at No. 119, Westbourne-terrace.

Recommending—

That a circular be addressed to the district surveyors calling their attention to the neglect of builders in giving proper notices of alterations, and the necessity for employing more stringent measures in order to compel stricter compliance with the act in this particular.

Reporting—

That the committee see no reason calling for any departure from the previous practice of the board in refusing to allow an additional fee for a second survey of a dangerous structure, as the committee consider that a sufficient inspection and report should be made in the first instance, so as to comprehend all the defects in the structure.

That the committee have investigated the complaint of Mr. Hunt, relative to the conduct of Mr. Badger, District Surveyor, Lewisham, and that the facts of the case are not such as, in their opinion, call for the interference of the Board.

Recommending—

That the line of thoroughfare from Oxford-street to Portland-road, Marylebone, be called Great Portland-street throughout; that the several houses and premises be re-numbered, the odd numbers being assigned to the houses on the west side, and the even numbers to those on the east side; that such numbers do commence at Oxford-street, and that notices be served upon the occupiers of the said several houses and premises accordingly.

Reporting—

That the committee have investigated the subject of the irregular building erected on the forecourt of No. 197, Marylebone-road, and are of opinion that it was the duty of the district surveyor, Mr. Jennings, to take steps for the removal of such irregular structure; and that he has been guilty of a grave dereliction of duty in omitting to take that course."

PICTURE-PURCHASES BY ART-UNION OF LONDON.

THE following works, amongst others, have been selected up to this time, by the prizeholders of the Art-Union of London:—

From the Royal Academy.—The Gaoler's Daughter, P. H. Calderon, 200*l*.; Tibbie Inglis, the shepherd's daughter, T. F. Marshall, 100*l*.; Pensive Moments, S. B. Halle, 73*l*. 10s.; At Trarbach on the Moselle, G. C. Stanfield, 42*l*.; Kate—"Taming of the Shrew," T. F. Dicksie, 52*l*. 10s.; The Valentine, G. Smith, 36*l*. 15s.; A Highland Dairy, A. Cooper, R.A., 31*l*. 10s.; The Rest by the Way, N. O. Lupton, 35*l*.; Loch Nicraig, A. Stanley, 25*l*.; A Quiet Pipe, G. Smith, 26*l*. 5s.; A Lane at Beckenham, R. P. Noble, 26*l*. 5s.

From the British Institution.—Beatrice de Dante, H. Weigall, 60*l*.; Sheep-Washing, J. Stark, 25*l*.; Net-Making, E. J. Cobbett, 25*l*.; "Come into the Garden, Maude," J. D. Wingfield, 20*l*.; the River Teign, near Chagford, T. J. Soper, 20*l*.; St. Mary's Redcliffe, A. Montague, 20*l*.

From the Society of British Artists:—Lyme Cob, Coast of Dorset, J. B. Pyne, 75*l*.; Distant View of Swansea, J. Tennant, 50*l*.; Near Snowdon, W. W. and J. C. Morris, 30*l*.; The Wedding Day, T. Clater, 40*l*.; Bay of Swansea, A. F. Rolfe, 30*l*.; Lyme Dinas, H. J. Boddington, 42*l*.; Hide and Seek, J. Bouvier, 25*l*.; The Evening's Repose, R. Benedict, 20*l*.; Gossip on the Way, T. Clater, 20*l*.

From the National Institution:—Waiting for Fish, W. Underhill, 75*l*.; A Bright Day at Ulleswater, S. R. Percy, 75*l*.; Derwentwater, C. Pettitt, 50*l*.; Buttermere, E. A. Pettitt, 25*l*.; Scene on the River Trent, B. Shipman, 21*l*.; Going to the Mill, N. O. Lupton, 20*l*.; The Homestead, J. F. Herring and A. F. Rolfe, 20*l*.; Babes in the Wood, F. Underhill, 25*l*.

From the Old Water-Colour Society.—Going to Market, W. Goodall, 40*l*.; Hastings—East Cliff, C. Davidson, 30*l*.; A Summer Noon, G. Dodgson, 20*l*.

From the New Water-Colour Society.—Still Life, Mrs. Margetts, 30*l*.; Near the Lac de Garda, Tyrol, Mrs. W. Oliver, 21*l*.

From the Royal Scottish Academy.—Wetheral Abbey, J. C. Wintour, 20*l*.

From the Society of Female Artists.—Lower End of Loch Tummel, Miss Stoddart, 20*l*.

"GRAVEN IMAGES."

SIR,—In an article in your last number, with the signature of "Robert Kerr,"—an article read at the Architectural Exhibition,—there occurs the following astounding statement:—"The second commandment of Moses [*sic*] forbids not merely the worshipping, but the making of any graven image or any likeness," *i. e.* "denounces the arts of sculpture and painting altogether, because in Egypt these had been so entirely identified with idolatry." I had certainly imagined that no sensible Christian held such an extraordinary view of the second commandment as this. Has Mr. Kerr never been taught that it is not the making of images that is forbidden, but the making of them with a view to falling down and worshipping them? Does he not know that in the holiest place in the Jewish temple,—on the altar itself,—the Shechinah, or visible manifestation of God's Presence, rested "between the wings of the cherubim," or two figures, or "images," or "likenesses," of angels, standing on the north and south ends of the altar, whose wings extended inward and formed a sort of cradle, in which the Divine Presence rested and made itself manifest? And does he not know that these "images" were made under God's own direction? And would God have (I write it with all reverence) so stultified His own commands as to have commanded two images to have been placed on the very altar itself, if His command had forbidden the "making of any graven image or likeness," as Mr. Kerr interprets this command?

How can a sensible man's mind have become so warped? When will the *virus* of Puritan and Protestant tradition cease to enslave and poison so many English minds?—minds, too, that promise great and noble things, if they could only get clear of that shallow prejudice which stunts and distorts both their faith and practice; and makes their owners (to use a simile of an eccentric English monarch) prefer to go barefoot, rather than demean themselves by servilely imitating certain sounder-headed but hated neighbours of theirs, by wearing shoes; a proceeding which would ruffle their trumpery dignity: for the minds of such specimens of religious humanity have not manliness enough to be taught by an enemy,—even in a common-sense question. ANGLICAN.

Books Received.

VARIORUM.

A VERY useful little volume titled "Chronology for Schools, being a revised abridgment of the 'Compendium of Chronology,' and containing the most important dates of general history (political, ecclesiastical, and literary), from the creation of the world to the end of the year 1857. By F. H. Jaquemont; edited by the Rev. John Alcoran, M.A.," has just been published by Messrs. Longman and Co. So far as the work relates to ancient history, this present edition is an abridgment, but the modern part has been greatly enlarged. The history of the British empire is printed in italics amongst the general matter; and there are indices facilitating the use of the whole as a book of reference.——By the same publishers has been issued a tract titled "An Introduction to Grammar on its true Basis with relation to Logic and Rhetoric." The essay is submitted, by the author, Mr. B. H. Smart, to the consideration of teachers as well as learners, and can scarcely be called a school treatise, being rather too logical and metaphysical for children.——The "First Report of the Vestry of the parish of Chelsea," under the Metropolis Local Management Act, 1855, has been printed. It treats of parochial and other matters for 1856-7. The authorities complain in their report that although the Government had 145,753*l.* voted by Parliament for the river embankment at Chelsea, the embankment had not proceeded farther westward than Chelsea Hospital; while a public company had been prevented, by the Chief Commissioner of Works for the time, from procuring an act of Parliament for making this embankment, on the ground that it would be improper such a company should have the control of the river frontage. The population of Chelsea, once a sparsely-studded "village of palaces," is now upwards of 64,000. It contains twenty-one miles of streets, and forty-four miles of footways. The rateable value is 208,510*l.*; the number of houses, 8,252, only 1,123 of which are above 40*l.* rateable value.——Two standard little books for emigrants, published by Wilson, of the Royal Exchange, London, have just entered their fifth edition: these are Mr. D. Puseley's "Rise, Progress, and Present Condition of Australia and Tasmania," and of "New Zealand:" each treatise comprising "necessary information for all classes of emigrants from authentic sources and personal observation." Mr. Puseley was some time a resident in these colonies, and he had access to Government sources for much of his statistical and other information. The works are, therefore, by no means mere home-manufactures, and of this there is sufficient internal evidence. The author, not only has a "high opinion" of New Zealand and of "its incomparable climate," but he says,—"if asked to name the first colony in the southern hemisphere, as a desirable home for the intending emigrant, the writer, with the most impartial sincerity, would answer—New Zealand."——In a "Letter of a Canadian Merchant, on the Prospects of British Shipping in connection with the Grand Trunk Railway of Canada" (Algar and Street, Clement's-lane, London), the writer points attention to the importance of this most comprehensive system of railway, and of Quebec and Portland in connection with it, as an outlet for the agricultural and other wealth of the Far West, and a way in for immigrants to the fertile territories which the Grand Trunk and its feeders have opened up.

Miscellanea.

ELECTRO-TELEGRAPHIC PROGRESS. — Experiments it seems have been tried in Paris, at the office of the *Moniteur*, to test the invention of M. de Lucy Fossarieu, "by which every kind of despatch, in whatever language, can be reproduced with mathematical precision and identity." A *transmetteur* and *récepteur* appear to have been invented, by the latter of which the writing of the former is reproduced with an exactness and rapidity of which the photographic process can alone convey a correct notion. Another still more expeditious method is said to have been discovered by the Abbé Casselli, of Florence. By this, facsimiles of manuscripts and drawings, coloured or otherwise, upon common paper, steeped in a certain liquid, can be transmitted to any distance. The machinery is self-acting. The paper required to be telegraphed is wrapped round a cylinder at one station, and another paper, similarly prepared, is rolled round a second cylinder at the other station. The machinery is put in motion, and a fac-simile of whatever is contained on the one paper is immediately reproduced on the other. The idea is not altogether new, whatever improvements may have been effected in it.—From a communication sent us by a Glasgow correspondent, it appears that Mr. N. J. Holmes, who has already realized improvements in the telegraph, has made a further discovery, of importance, especially in long lines such as the Atlantic cable. As described, the advantages of this improvement comprise a capability of being worked over very long or extended circuits by the direct action of the current without the intervention of the relays or secondary currents now in use, while the amount of battery power, requisite to transmit signals on long or short circuits, is reduced by one-half or more, both from the capabilities of the invention and the absence of secondary power. The large amount of battery power now used tends to impair the individuality of the signals, and this defect, by the reduction of the power, would be overcome. The invention is said to be applicable to all the existing systems of telegraphing, with comparatively little outlay. It is not yet patented, and therefore is not particularly described; but an offer is said to have been made of it to the Atlantic Company.

THE FINANCES OF THE CORPORATION OF LONDON.—According to a report on the revenues of the corporation, they have incurred prodigious liabilities. Within the last ten years they have expended upwards of 915,000*l.* over and above their income; 550,000*l.* having been expended in the Cannon-street improvements, 450,000*l.* on the new market, and 270,000*l.* in the Clerkenwell improvements, the entire returns from which do not now amount to upwards of 9,000*l.* per year, including the ground-rents and the tolls of old Smithfield-market. It is understood that all the ground-rents of the Cannon-street improvements now remaining unsold will be disposed of, and upon the sale of the surplus ground in Clerkenwell being completed, sums will be realized in diminution of the aggregate debt, so as to leave the deficiency on the whole improvements about 900,000*l.*

GAS EXPLOSIONS.—Explosions of gas causing serious injury to person and property having recently occurred, I have made inquiry as to the cause of the escape of gas, and having ascertained that the escape was from the hydraulic slide of the chandelier, in consequence of its becoming unsealed by the evaporation of the water, I beg through your columns to point out the necessity for attention to the hydraulic slides, and to recommend a simple remedy against evaporation. When the hydraulic tube is supplied with water, a teaspoonful of good salad oil should be afterwards added, which will effectually prevent evaporation of the water. I have in some cases had the hydraulic tubes filled entirely with oil, but found that the chandelier did not work so well as in water for any length of time. My object was to avoid the constant evaporation of the water, which object is effected by the use of a small portion of oil as above stated.

MAGNUS OHREN.

LATTICE GIRDERS, ITALIAN OPERA HOUSE.—We are asked to state that the design of these girders has been wrongly attributed, and that it is due to Mr. S. Barrass, acting in conjunction with Messrs. Grissell.

THE ITALIAN OPERA HOUSE.—Sir, in your notice last week in the *Builder* of the Royal Italian Opera House, Covent Garden, you gave a list of those by whom the various works were executed; but our names were omitted. I beg to state that all the paper hangings for the boxes, including her Majesty's and the Duke of Bedford's boxes, retiring rooms and staircases, were supplied and hung by us.—J. COLE and SON.

THE CRYSTAL PALACE.—The Flower Show at the Crystal Palace on Saturday, the 22nd, whether as respects the flowers, the day, or the attendance, was a success. The number of plants collected was very large, and some of them were singularly beautiful specimens. Music and the fountains contributed to the enjoyments of the day. The music-loving public will have heard with pleasure that arrangements have been completed with Mr. Gye for Six Concerts on a grand scale, comprising the entire talent of the Royal Italian Opera. These Concerts will commence on Friday, 28th May, and be continued fortnightly.

THE ADELPHI THEATRE.—The pleasant little Adelphi is to be rebuilt forthwith, it seems, from the designs of Mr. Thomas H. Wyatt. Additional space, we suppose, will be obtained so as to give, what is so much wanted there, more stage room. Mr. Webster and Madame Celeste have added to the association of the old house by their admirable acting in "Our French Governess."

THE GALLERY OF ILLUSTRATION, REGENT-STREET.—Mr. and Mrs. German Reed's new entertainment, "After the Ball," although it presents scarcely such variety of character as that which preceded it, is very cleverly written, capitally acted and sung, and exceedingly amusing. Mr. Reed is more at home than formerly, and Mrs. Reed has no occasion to be so: her versatility, talent, and acquirements, are unrivalled. A good Elizabethan interior, enlivened by oblique lines in the disposition of the walls and ceilings, provides an effective scene for the display of the entertainment.

NEW VESSELS LONGER THAN THE LEVIATHAN.—The *Liverpool Albion* says that two vessels of greater length than the *Leviathan*, and of a more remarkable character, have been advancing to completion in Liverpool without the general public being even cognizant of their existence. These vessels are each 700 feet long. They have been constructed by Messrs. Vernon and Son, for the Oriental Inland Steam Company, and are intended for the navigation of the Indian rivers. The purpose of their peculiar features of construction is to enable a large cargo to be carried at a good rate of speed upon a light draught of water. As great length without other provision would imply great weakness, each vessel is broken up into six parts, each of which part floats and is a complete vessel of itself, so that each vessel consists, in fact, of six independent vessels, or barges, of which the first one is a steamer, towing all the rest.

PROPOSED PUBLIC BUILDINGS AT IRVINE.—Public buildings are about to be erected in Irvine, a considerable town in the west of Scotland. The site of the buildings is that of the public market, opposite to the present town-house, an old building standing in the centre of the street. The new building includes on the ground floor, the town clerk's offices, record-room, council-hall, &c.; and on the second floor is the town-hall, 70 feet by 32 feet 6 inches, with retiring-rooms, &c. The walls throughout will be of stone. The cost will be about 3,500*l.* Mr. Ingram, of Kilmarnock, is the architect. The building is Italian in style, n two stories, with a tower over the central doorway.

HOLY TRINITY DISTRICT SCHOOLS, WEYMOUTH.—Sir: In your journal of the 22nd inst. it is stated that "The foundation-stone of the above schools was laid on the 22nd of March," &c. &c., and that "the drawings were prepared by Mr. P. Arthur." This statement is incorrect, as the schools and school-house were erected from my designs in 1853, at a cost of upwards of 1,000*l.* I have been informed by the incumbent of the district that a small addition was proposed to be made to correspond in design and style, but as it was not necessary to apply to me, two guineas had been paid for a drawing of a plan for the builder's signature and contract. This is all that has been done, and the design is no more like "Early English" than Early Hindoo. However, I shall feel obliged by your inserting this in your next publication, in vindication both of myself and of my building.

TALBOT BURY.

THE WORKS AT CHERBOURG.—A letter from Cherbourg gives some interesting details relative to the works now being constructed in that port. The inner dock is 1,260 feet long and 600 broad. It is capable of receiving an entire fleet, which will be quite safe from an enemy's fire at the greatest distance at which it has been ever known to take effect. The execution of this dock cost enormous trouble, being cut out of the solid rock to the depth of 54 feet. The excavation of this was effected by a mine, which only explodes with a dead noise, and raises the soil to the extent of some hundred yards. This dock, which is completely isolated, will communicate with the other docks by a sluice 1,200 feet long, and by another 300 feet long. The plan was given by Napoleon I.

KELLIN, LANDSCAPE PAINTER.—We are informed of the death of the eminent French painter, Kellin, one of the best pupils of Roqueplan and Bonington. This artist, who was often admired at the exhibitions of Paris and of the most important towns of France, died at Samer, near Boulogne-sur-Mer, on the 18th of May. The finest epoch of Kellin's reputation was under the reign of the king, Louis Philippe, who bought many of his water-colours, especially views of royal residences. Kellin, in spite of his age, still worked very much, and several of his pictures were exhibited at the last exhibition of Lyons. He was named member of the "Societé Libre des Beux Arts" in 1857.

CONVERSAZIONE OF THE INSTITUTION OF CIVIL ENGINEERS.—The conversazione given by the president, Mr. Locke, M.P., on Tuesday evening last, was very numerously attended, and passed off well. Many interesting works of art, including a bust by Hiram Powers, to pair with "Cleite," and various models of inventions, occupied the attention of the visitors.

MAP OF LONDON IN THE REIGN OF KING CHARLES THE FIRST.—Messrs. Evans, of the Strand, have published a *fac-simile* of W. Faithorne's map of London, of which, it is asserted, but two impressions are known to be in existence, one in the Bibliothèque Impériale at Paris, the other in the possession of Messrs. Evans. "The date of the survey seems to be pretty accurately determined by the two following facts, viz.: Cheapside-cross, formerly standing at the end of Wood-street, is *not* here represented: the populace demolished it on May 3rd, 1643, in contempt of the Popish anniversary of the Inventio S. Crucis; while that long known as Charing-cross is depicted as standing in all its glory: it was wholly cleared away in August, 1647." The engraving of the survey was not completed until 1658, and advantage was taken of the delay to introduce the new buildings and improvements up to that date, as is proved by the introduction (among others) of the buildings on the west side of Lincoln's-inn-fields (over the archway, in the centre of which still remains a stone inscribed DVKE STREETE, 1648); and Clare Market (here designated New Market), which was opened by John Holles, Earl of Clare, in 1656. Great research, it appears, has been made by an ardent collector of London topography, in the hope of discovering another impression of this map to add to his collection, but without success. The *fac-simile* is engraved on copper on five large sheets, the same size as the original, and is a very interesting document in elucidation of the progress of the metropolis.

SCARLET FEVER AT CHESTER BARRACKS.—In consequence of an overcrowding of troops at Chester barracks scarlet fever and measles have made their appearance among the soldiers there. In a fifteen-men's room were crowded eighteen women and forty-four children, and there the fever shortly afterwards made its appearance. Detachments were forthwith sent to Salford, Bury, and Liverpool, and every effort made to prevent the contagion from spreading,—unless, indeed, it has even thus been spread to Liverpool and elsewhere.

ASSYRIAN ANTIQUITIES.—A new Assyrian saloon has just been opened at the Louvre. Some additions have been made to the Emperor's gallery in the Museum of Antiquities.

GRANITIC BRECCIA STONE COMPANY.—A company has recently been formed for the manufacture of this stone under letters patent. The stone, it is said, possesses the qualities essential in a constructive material—strength, durability, and economy—and can be manufactured in a single piece, varying from 1 cwt. to 30 tons or more, and in slabs of from 5 to 100 feet superficial. The capital of the company is 100,000*l.* in 100,000 shares of 1*l.* each, incorporated with limited liability, under the Joint Stock Companies Act.

THE ARCHITECTURAL MUSEUM.—The Earl de Grey, President of the Institution, has fixed Thursday, July 15th, for the Annual Conversazione.

SOUTH KENSINGTON MUSEUM.—The distribution of the Local Medals awarded to the Students of the London District Schools of Art took place on the 19th inst., in the Theatre attached to the South Kensington Museum, the Marquis of Salisbury, Lord President of the Council, officiating.

CUBIC FEET OF GAS PER POUND OF COAL.—At the Philadelphia gas works, in 1857, according to the (U. S.) *Mining Register*, the largest quantity of gas from each pound of coal, made for any full day's work, was 4·83 feet.

GLASGOW ARCHITECTURAL ASSOCIATION.—At a meeting of this association, held on Wednesday evening, the 19th instant, Mr. Thomas Halket, jun. read a paper on "The Antiquities of Rome."

WORKMEN'S DWELLINGS, BATTERSEA.—An association has been formed, in connection with Price's Patent Candle Company, to provide dwellings at Battersea for the workpeople in that establishment, a similar experiment at their factory near Liverpool having been successful. The sum required, which is to be raised among the proprietors and their friends in 1*l.* shares, is 20,000*l.*, and the rentals are proposed to be fixed so as to yield 6 per cent. on the outlay, and to provide a Repair and Depreciation Fund.

EGYPTIAN ANTIQUITIES IN FRANCE.—A letter from Alexandria says:—"Some excavations made under the direction of M. Mariette, conservator of the Egyptian Museum of the Louvre, have led to the discovery of a great number of valuable antiquities. Thirty cases have already reached the French consulate, where they await the arrival of a vessel of the State to convey them to Marseilles. Among them is a sarcophagus in rose-coloured granite of the time of Cheops, the founder of the great pyramid. It is 2½ metres (about 8ft. 2in.) in length, and covered with sculpture in excellent preservation,—in all 1,500 articles, which will form a fine collection, and are estimated in value at more than 200,000f. The viceroy has just issued an ordinance which the whole of Europe will applaud. He has ordered the formation at Alexandria of an immense museum, in which will be collected curiosities from every part of the country of the Pharaohs, where so many still remain notwithstanding the dilapidations which have taken place up to this time. MM. de Montant and Linant-Bly, engineers-in-chief of the Government, are already engaged in drawing out plans for this building, which the Viceroy wishes to be worthy of the antiquities which it is intended to contain.

TENDERS.

For new dock, entrance, basin, inner dock, and timber-pond at the Grand Surrey Docks. Messrs. Bidder and Jennings, engineers:—

Lucas	£147,500	0	0
Aird	142,041	0	0
Gow	134,555	0	0
Tredwill	127,473	0	0
Jay	124,250	0	0
W. Cubitt	123,740	0	0
Perry	119,934	0	0
Smith and Knight	116,500	0	0
Peto and Betts	113,740	0	0
Baker	107,000	0	0

For new building in Leadenhall-street, City, for the Peninsular and Oriental Steam Navigation Company. Mr. W. H. Currey, architect. Quantities supplied by Messrs. Welch and Atkinson:—

Westacott	£9,835	0	0
Lee and Son	8,870	0	0
Cubitt and Co.	8,390	0	0
Holland and Co.	8,336	0	0
Piper and Son	8,287	0	0
Lucas, Brothers (accepted)	8,114	0	0

For the erection of nine houses on the Ashburnham Estate, Greenwich, for Mr. J. G. Fleay. Mr. C. H. Howell, architect. Quantities supplied by Messrs. Pearson:—

Penny	£6,995	0	0
Lote	6,856	0	0
Smith	6,797	0	0
Cooper	6,450	0	0
Jarvis and Co.	6,366	0	0
Todd and Co.	6,259	0	0
Hawkins	5,940	0	0
Dove	5,889	0	0
Hollamby	5,847	0	0
Symmons	5,710	0	0
J. and W. Barker	5,691	0	0

For re-building premises, No. 36, Fenchurch-street. Mr. E. Ellis, architect. Quantities supplied by Mr. Percy and Mr. Carter:—

Mansfield and Son	£5,680	0	0
Little and Son	5,597	0	0
Westacott	5,575	0	0
Ashby and Horner	5,325	0	0
Colls and Co.	5,275	0	0
Piper and Son (accepted)	5,242	0	0

For building a warehouse and offices in Newgate-street and corner of Panyer-alley, for Messrs. Faudel and Phillips. Messrs. Tillott and Chamberlain, architects. The quantities supplied:—

Holland and Co.	£3,945	0	0
Jay	3,863	0	0
Ashby and Son	3,845	0	0
Nicholson and Son	3,800	0	0
Myers	3,789	0	0
Burton	3,748	0	0
Patrick and Son	3,744	0	0
Brass	3,693	0	0
Piper and Son (accepted)	3,667	0	0

For new Corn-exchange, Stamford. Mr. Edward Browning, architect, Stamford:—

Perkins, Stamford	£2,593	0	0
Jeffs and Roberts, Stamford	2,336	0	0
Ellis and Son, Peterborough	2,100	0	0
Young, Lincoln	1,784	0	0
Bradshaw, Stamford	1,743	0	0
Norman, Leicester	1,689	0	0

For the erection of a pair of semi-detached houses on Hackney-downs. Messrs. Morphew and Green, architects. Quantities supplied:—

Amos	£2,300	0	0
Gammon	2,291	0	0
Rudkin	2,262	0	0
Patrick and Son	2,242	0	0
Smith	2,197	0	0
Calow	2,097	0	0

For farm-buildings and bailiff's house at Fiskerton, near Lincoln. Mr. Michael Drury, architect:—

Lovelee, Branston	£2,285	0	0
Cullen, Market Rasen	2,280	0	0
Freeman, Market Rasen	2,259	0	0
Barnes and Birch, Lincoln	2,249	0	0
Jackson, Lincoln	2,165	0	0
Kirk, Lincoln	2,157	0	0
Ward, Lincoln	2,130	0	0
Young, Lincoln	1,923	0	0
Booth, Boston	1,900	0	0
Wallis, Market Rasen	1,825	0	0
Bavin, Metheringham	1,783	0	0
Clipsham, Norwell	1,768	0	0

For sewers for the parish of Shoreditch:—

Wood and Son	£1,760	0	0
Cole	1,750	0	0
Hocken	1,700	0	0
Phillips	1,597	0	0
Hill	1,517	0	0
Dethick	1,295	0	0

For abattoirs for the Borough of Reading Local Board of Health. Mr. J. G. B. Marshall, architect and surveyor, &c.:—

Orton and Child	£1,850	0	0
Hayes	1,800	0	0
Strong	1,722	0	0
Savage	1,683	0	0
Strong	1,675	0	0
Matthews (accepted)	1,557	15	0

For house to be called "Rose Villa," Vine-road, East Moulsey. Mr. J. C. Catling, architect. Quantities supplied:—

Elston and Son	£899	0	0
Aderton	850	0	0
Adamson and Sons	838	0	0
Wood and Son	820	0	0
Hocken	785	0	0
Harrison	790	0	0
Heather (accepted)	649	0	0

For alterations and additions to a house at Hammersmith. Mr. G. Truefitt, architect:—

Hale	£370	0	0
Bird	340	0	0
Hurst	336	0	0
Smith	307	0	0
Evans	300	0	0
Eydman	229	0	0

TO CORRESPONDENTS.

G. M.—A. J.—Mr. H.—R. C.—Mr. F.—O. H. (thanks).—Portsmouth.—S. B.—R. R. B.—L. M.—R. A. A.—J. C. and Son.—W. and S. H.—W. M.—H. C. C.—J. G.—A Ten Years' Reader.—T. B.—W. M. (list was not enclosed).—H. W.—J. A. D. (in type).—F. L.—W. S. (would involve us in action for libel).—Rev. A. C.—W. B. G.—T. and C.—Mr. E.—"An Observer of Churches" (out of print).

"BOOKS AND ADDRESSES."—We are forced to decline pointing out books or finding addresses.

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A GOOD WORKMAN in the above business may have immediate and constant EMPLOYMENT, on application to THOS. SMITH and SON, Northampton. No one need apply who cannot give references as to character and ability, and one who has been used to the country will be preferred.

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CLERK of the WORKS.—WANTED, a respectable, well-conducted MAN, of active business habits, to SUPERINTEND SEWERS and ROAD WORKS, under the direction of a Surveyor. One who has been previously employed by a sewers commission would be preferred, if possessed of the requisite qualifications. Salary at the rate of 150*l.* per annum.—Apply by letter only, post paid, stating age, qualifications, and previous engagements, to S. G. at Mr. Roberts's, 2, Arabella-row, Pimlico. It is particularly requested that testimonials be not forwarded unless applied for.

PLUMBING.

EMPLOYMENT WANTED, by a respectable experienced Man, willing to make himself useful. No objection to town or country. Respectable reference.—Address, W. T. 20, Doris-street West, Princes-road, Lambeth, S.W.

FOREMAN of FRET GLAZIERS WANTED, to take charge of a Shop in town. Wages, 2*l.* per week. One preferred who has held a similar situation in the country.—Address, X. Y. Office of "The Builder."

NOTICE to CLERKS of WORKS, ARCHITECTURAL DRAUGHTSMEN, &c.—The Commissioners of Public Works having occasion for the services of an additional CLERK of WORKS, invite competent persons to whom such appointment may be acceptable, to apply for the same, and to accompany their application by a statement showing what experience they have had in the superintendence of buildings, and to send copies of any testimonials of qualification in their possession from architects or builders. A thoroughly practical knowledge of builders' work in all its details, as well as the measurements of works, will be indispensable. The candidate must also exhibit specimens of drawings, and be able to draw neatly designs from architect's sketches. No person need apply whose age exceeds thirty-five years. Salary 156*l.* 10*s.* per annum, rising by 10*l.* annually to 250*l.* the maximum; with 10*s.* 6*d.* a night personal allowance when absent on duty, and 20*l.* per annum to cover expense of an Office.—By order, EDWARD HORNSBY, Secretary.
Office of Public Works, Dublin, May 13, 1858.

TO BUILDERS.

THE Advertiser, of considerable experience in Builders' accounts, desires an ENGAGEMENT, of four to five days a week, in the Office of a Builder or Contractor, requiring partial assistance. Good references, and terms moderate.—Address, J. X. Y. Z. Office of "The Builder."

TO ARCHITECTS AND SURVEYORS.

THE Advertiser, having just completed an engagement with a Surveyor to one of the Metropolitan Boards of Works, requires EMPLOYMENT. Can design, draw perspective, take out quantities, measure up work, &c. Terms, 30*s.* per week. London only.—Address, A. J. 37, New Gloucester-street, Hoxton, N.

TO ARCHITECTS, &c.

THE Advertiser, being about to leave his present Engagement, wishes to obtain another in a London Office. Has been eleven years in the profession. Terms moderate.—Address, B. A. Z. 19, Great Hall, Hungerford, Strand, W.C.

THE Advertiser, a well experienced CLERK of WORKS and DRAUGHTSMAN, is open for a RE-ENGAGEMENT in town or country. Good taste in preparing and finishing plans, perspectives, &c. understands surveying and levelling well. Particulars as to references to ability and character.—Address, F. W. C. Office of "The Builder."

TEMPORARY ASSISTANCE.—An ARCHITECTURAL DRAUGHTSMAN, accustomed to prepare perspectives, finished, working and detail drawings, specifications, take out quantities, measure artificers' work, &c. is desirous of rendering temporary ASSISTANCE to Architects, either at their Offices, or his own Chambers.—Address, R. B. 43, Southampton-row, Russell-square, W.C.

TO CONTRACTORS, ENGINEERS, OR SURVEYORS.

THE Advertiser, aged 26, is desirous of a RE-ENGAGEMENT in connection with the above Offices. Quick as an accountant, and well acquainted with the general routine; two years in an eminent London firm. No objection to the country.—Address, J. C. B. 5, Mount-terrace, Westminster-road, S.

TO THE PROFESSION.

THE Advertiser, having completed a pupilage of five years with an Architect and Surveyor of extensive practice (in Ireland), is desirous of an ENGAGEMENT. He is acquainted with all the branches of the profession. Remuneration not so much an object as improvement.—Address, C. C. 7, Green-terrace, Myddelton-square, London.

TO GLASS PAINTERS.—WANTED, a PAINTER who can paint Drapery; also, one accustomed to Diaper work.—Apply to HEATON and BUTLER, 24a, Cardington-street, London, N.W.

PARTNERSHIP.—To BUILDERS.—WANTED, a SHARE in an established BUSINESS, Country preferred.—Address, A. B. C. 29, Davies-street, Berkeley-square.

WANTED, an ARCHITECTURAL DRAUGHTSMAN.—Address, BOX B. I. Post-office, Manchester, stating terms and qualifications. As a first-class man will be dealt with liberally, it is hoped that none but those of a superior class will apply.

WANTED, in an ARCHITECT and SURVEYOR'S OFFICE, an ASSISTANT who thoroughly understands the making up of estimates and preparing bills of quantities.—Apply to Messrs. WRIGHT and GOULD, 27, King-street, City.

TO GAS ENGINEERS.

WANTED, by the Folkestone Gas and Coke Company, an experienced man as MANAGER. He will be required to have a good practical knowledge of gas engineering in all its branches, and to take the register of all metres, and must be able to give unexceptionable references as to character and capabilities. A residence will be provided on the works.—Apply to Mr. JOSH. GARDNER, Gas Works, Folkestone.
May 26, 1858.

TO BUILDERS.

WANTED, by the Advertiser, a SITUATION as FOREMAN, to take the Management of the Business. Well understands all sorts of drawings, estimating, &c. Has a capital chest of tools. Can be highly recommended from his late employer. The country preferred.—Apply, HOLAND, Office of "The Builder."

TO RAILWAY CONTRACTORS.

WANTED, a SITUATION as AGENT or TIMEKEEPER; has had fourteen years' experience in railway works, and can produce satisfactory testimonials as to character and ability.—Address, J. A. at Mr. Williams's, 2, Bird-in-Bush-terrace, Salmon-lane, Limehouse.

TO CARPENTERS AND BUILDERS.

WANTED, by a Young Man, who has had several years' experience, to ARTICLE or ENGAGE himself for a short term, at moderate wages, his object being to obtain a thoroughly practical knowledge of the business.—Address, M. J. at Paragreen's, 39, Goswell-road, E.C.

WANTED to PURCHASE, in Surrey, Kent, Sussex, Hertfordshire, or Buckinghamshire, a Commodious FAMILY HOUSE, with Large and Lofty Reception-Rooms, not less than Six Principal Bed-rooms, and suitable domestic offices: Stabling for four or five horses, double Coach-house, Pleasure and Kitchen Gardens; together with 20 or 30 acres of Pasture Land. The property to be freehold, not more than two or three miles from a railway station, nor more than 20 to 30 miles from London.—Address, to R. E. M. care of J. W. Lawson, Esq. 50, Lime-street, London.

TO BUILDERS.

WANTED, by a respectable Young Man, a SITUATION as WORKING FOREMAN, or employment at the bench. Can set out and execute all joiner's work, or would take charge of a job. Town preferred. Good reference.—Address, No. 1, Wilhem Cottage, Acton-street, Kingsland-road.

TO TIMBER-MERCHANTS, BUILDERS, ENGINEERS, &c.

WANTED, a SITUATION as CLERK, TIME or STORE KEEPER, by a Young Man of practical abilities. Understands measuring, and is quick at accounts. Salary moderate. Good references.—Address, J. A. 25, Duncan-terrace, City-road, N.

TO BUILDERS.

WANTED, by the Advertiser, a Middle-aged Man, Carpenter and Joiner by trade, a SITUATION as FOREMAN; has a practical knowledge of the Building trade in all its branches. Satisfactory references. No objection to the country, or to go abroad.—Address, R. M. E. 44, Upper Seymour-street, St. Pancras.

TO GLASS DEALERS, &c.

WANTED, by a Young Man who has been accustomed to the Glass Trade, a SITUATION at the CUTTING BOARD, and to keep accounts; would fill up his time at Glazing, and make himself generally useful.—Address, J. O. 62, St. George's-road, Kent-road, Borough, London.

TO CARPENTERS, JOINERS, &c.

WANTED, by a strong Lad, a SITUATION, for a term of years, or otherwise, who has been three years in the business.—Address to A. B. Mr. Hill, Lime and Cement Merchant, 4, Chapell-street, Edgware-road.

TO BRICKMAKERS, BUILDERS, RAILWAY CONTRACTORS, AND OTHERS.

WANTED, by a Man who has had 33 years' practical experience, a SITUATION as MANAGING FOREMAN in a Brickfield, or would prefer taking the Work by Contract. Would not object to go abroad.—Apply to E. D. 30, Tabernacle-walk, Finsbury, London.

TO BUILDERS AND GENTLEMEN IN THE COUNTRY.

WANTED, by a Young Man, a SITUATION as SHOP FOREMAN to a Builder, or on a Gentleman's Estate. Five years' good character.—Address, A. B. Britannia Tavern, Back-road, St. George's East.

TO CARPENTERS, BUILDERS, SURVEYORS, AND OTHERS.

WANTED, by the Advertiser, a SITUATION, either as FOREMAN, or CLERK of WORKS. Is a good draughtsman, can make out fair and working drawings, take out quantities, set out work, &c. &c. No objection to the country.—Address, W. J. L. No. 9, Walcot-square, Kennington-road, London.

WANTED, by a Young Man, a SITUATION, as CARPENTER on an estate. Highly recommended from his last situation, which he has held four years.—Address, W. J. Post-office, Bromley, Kent.

TO PLUMBERS, PAINTERS, AND GLAZIERS' CLERKS.

WANTED, a CLERK, who can keep accounts, measure work, prepare estimates, and superintend workmen. Unexceptionable references as to character required.—Address (in the first instance), stating age and salary required, to A. Z. B. care of Mr. New, 23, Henrietta-street, Covent-garden.

TO PLUMBERS.

WANTED, by a Young Man, a SITUATION as IMPROVER. Wages not so much an object as to be put forward. Understands glazing.—Address, P. V. 12, Adam-stree West, Bryanstone-square.

TO BUILDERS, CONTRACTORS, &c.

WANTED, by a Young Man, aged 22, an ENGAGEMENT in a Builder's Office. Has been two years in a Surveyor's Office. Salary moderate for the first six months.—Address, S. Post-office, Wycombe-terrace, Hornsey-road, Holloway.

TO MASTER PAINTERS, &c.

WANTED, by a Young Man, CONSTANT WORK, as Plumber, Painter, and Glazier.—Address, B. A. 9, King's-place, Old St. Pancras-road.

TO CARPENTERS AND BUILDERS.

WANTED, a MASTER, for a strong Lad, 18 years of age, who has been used to the carpentering business.—Address, T. S. 10, Belvedere-crescent, Belvedere-road, Lambeth.

WANTED, an ASSISTANT, of integrity and punctuality, who writes a neat hand, and is competent to make a specification of repairs or dilapidation. Salary, 30*s.* a week.—Address, J. B. care of Mr. Michael Warren, 111, Winchester-street, Pimlico, S.W.

TO MASONS.

WANTED, immediately, a FOREMAN of MASONS; one who has been accustomed to railway bridges, piers, &c. &c. preferred. Liberal wages will be given to a good man.—Apply, by letter, to R. M. care of Abbott, Barton, and Co. Advertisement Contractors, 2, Upper Wellington-street, Strand, W.C.

WANTED, a GENERAL CLERK, who understands builders' accounts, &c.—Apply by letter, stating qualifications, where last employed, and salary required, to Mr. SIMPSON, 30, Baker-street, Portman-square.

TO GENTLEMEN HAVING ESTATES, &c.

WANTED, by a Young Man, PERMANENT ENPLOYMENT as PAPER-HANGER, DISTEMPERER, PAINTER, and GLAZIER. Can make himself useful in plumbing and the trade generally. Wages, 24*s.* per week.—Address, H. Y. at Mr. Lawrence's, Town-hall Coffee-house, Hackney.

WANTED to APPRENTICE, in-door, a YOUTH, about 15½ years of age, who has a decided taste for drawing, to an ARCHITECT and SURVEYOR, ENGINEER, DRAUGHTSMAN, AUCTIONEER, or some other profession or business where drawing, application, and industrious business habits will have greater consideration than a large premium. The country and a Dissenting family preferred.—A note addressed to T. L. B. corner of Oval-road, Cherry-orchard, Croydon, will have immediate attention.

TO PLUMBERS, BUILDERS, AND OTHERS.

WANTED, by the Advertiser, a constant SITUATION. Is a first-rate tradesman, and understands deep well pump work, bath and water-closet work, in all its branches. No objection to fill up his time with gas fitting, glazing, &c.—town or country. Good reference.—Apply, stating terms, to W. B. No. 49, Whitcomb-street, Haymarket, London.

WANTED, a SITUATION as GENERAL FOREMAN, or FOREMAN of CARPENTERS, by an experienced workman, who has had the management of extensive jobs in the City. No objection to the country. Best references given.—Direct A. K. B. 26, Paddington-street, Marylebone.

WANTED, PARTIAL or EVENING EMPLOYMENT, in taking out quantities, estimating, making specifications, copying or tracing drawings, by a person who has a thorough practical knowledge of building.—Address H. No. 22, Clarence-road North, Kentish Town.

WANTED, a WORKING SHOP FOREMAN, who thoroughly understands his business, and can set out all description of joiners' work, and make working drawings.—Address, stating age, wages expected, and references, to A. B. O. Mr. Langham's Tobacconist, Holborn, a few doors from Gray's Inn-lane.

TO MASTER PAINTERS AND BUILDERS.

WANTED, by a steady young Man in the North, who has had considerable experience in the business, in all its branches, a SITUATION in London or the suburbs, as GENERAL FOREMAN in the painting, glazing, gilding, and paper-hanging departments. Good references can be given as to character and ability. Wages not so much an object as a permanent situation.—Address, ALPHA, Office of "The Builder."

TO BUILDERS AND PLUMBERS.

WANTED, by a respectable Young Man, a SITUATION; is a good Plumber and will fill his time up in Painting if required. No objection to town or country.—Address, J. G. 23, North-street, Manchester-square, post paid.

WANTED, SCAGLIOLA MIXERS and POLISHERS.—Apply to Mr. CASENTINE, 94, Hercules-buildings, Westminster-road, Lambeth, London, S.